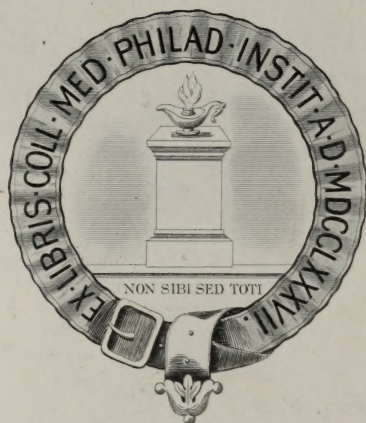


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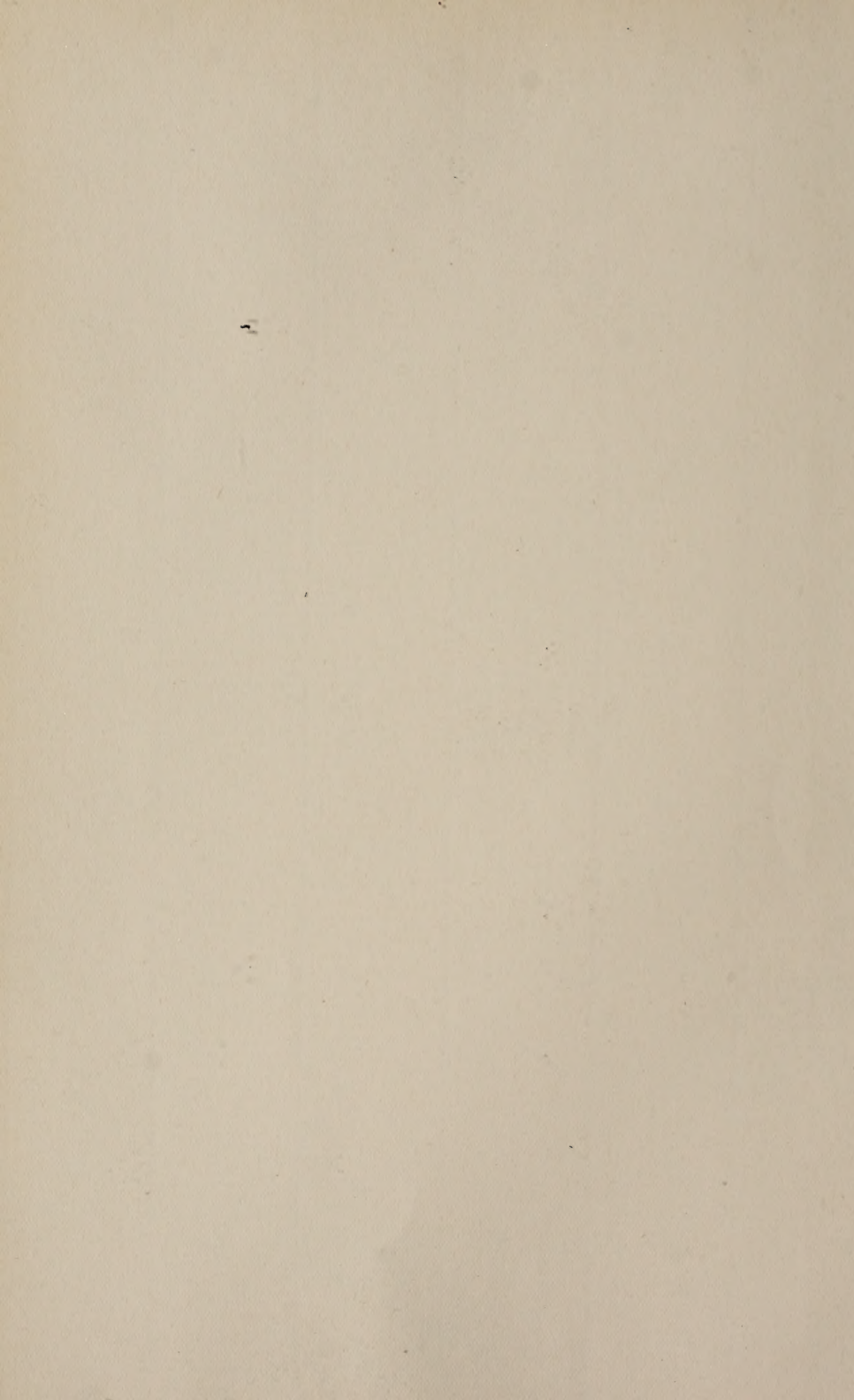


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ST. LOUIS

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No. 1.

ORIGINAL CONTRIBUTIONS.

The Present Status of the Treatment of
Puerperal Infection.

By H. J. GARRIGUES, A.M., M.D.,

NEW YORK CITY,

CONSULTING OBSTETRIC SURGEON TO MATERNITY HOSPITAL; GYNECOLOGIST
TO ST. MARK'S HOSPITAL, ETC., NEW YORK.

Read before the Medical Society of the County of New York, December 21, 1900.

IT is now seventeen years since I introduced strict antiseptic obstetrics in America. The 1st day of October, 1883, marks a new era in this country in regard to the preventive treatment or rather the prophylaxis of puerperal infection, that being the date upon which I introduced the disinfection with corrosive sublimate and the occlusion dressing in the New York Maternity Hospital, from which they soon spread over the whole country.

It was in this very Society that in December, 1883, I laid before the profession the results obtained by the new treatment of puerperal patients.¹ In his "Science and Art of Mid-

¹ H. J. Garrigues, "Prevention of Puerperal Infection," *Medical Record*, December 29, 1883.

wifery" Lusk says: "Dr. Garrigues has furnished a most extraordinary example of the efficacy of the antiseptic treatment at the New York Maternity Hospital. * * * When the details of this treatment were first published by Garrigues, many took a humerous view of it, but mark the result."²

Comparing the records of the Maternity Hospital for the nine years preceding and the ten following the change of treatment, we find that during 1875 to 1883 there were 3,504 deliveries with 146 maternal deaths, that is 4.17 per cent. During the last six months the mortality was 8 per cent., and during the last month it reached even 20 per cent.

During the first three months after changing the treatment there were 102 confinements without a single death, a freedom from mortality which at that time seemed almost miraculous, but which soon became quite a common event and even extended over much longer periods.

During the first ten years of the new era there were 2,789 deliveries with 33 deaths, of which only 7 were due to sepsis, that is a total mortality of 0.87 and that from sepsis 0.39. *The mortality was then reduced to nearly one-fifth of what it used to be.*

Similar and still better results have been obtained in other places, so that now-a-days the total mortality in lying-in institutions is about one-half of one per cent. or 5 in 1,000.

It is not my intention in this paper to discuss the means by which this wonderful result has been brought about. In this respect information is easily obtainable. I may, for instance, refer to my own writings: "Guide to Antiseptic Midwifery," Detroit, 1886; "American System of Obstetrics," edited by Hirst, Philadelphia, 1889; "Textbook of Obstetrics by American Authors," edited by Norris, Philadelphia, 1895, of which a new edition is being prepared.

I wish only *en passant* to call the attention of the general practitioner to the fact that, while our public institutions all follow the rules of antiseptic and aseptic midwifery and obtain similar results to those of foreign countries, these rules are far

² W. T. Lusk, "Science and Art of Midwifery," New York, 1885, page 689.

from being carried out here in private practice as they ought to be.

I do not ask for asepticism in private practice, which in my opinion is not practicable in most private dwellings, but I think it is the duty of everyone who practices obstetrics to use the antiseptic precautions which have revolutionized lying-in hospitals. On October 27, 1882, the Obstetric Section of the New York Academy of Medicine, on my motion, passed unanimously the following resolution :

WHEREAS, Experience both in this country and abroad shows that by strict antiseptic measures the total mortality in lying-in hospitals may be reduced to a few per thousand ;

WHEREAS, Deaths due to childbirth or abortion are yet common in private practice ;

Resolved, That in the opinion of the Obstetric Section of the New York Academy of Medicine, it is the duty of every physician practicing midwifery to surround such cases in private practice with the same safeguards that are being used in hospitals.

In this paper I wish only to pass briefly in review the resources at our disposal in combating puerperal infection when it actually has taken place. I take the word infection in the widest sense so that it comprises all the diseased conditions in puerperal women caused by microbes or their products, except eruptive fevers, non-inflammatory diseases of the nervous system, such as tetanus, tetany, and insanity, and inflammations of the breasts. The term includes then not only what by others is called *infection*—*i. e.*, the disturbances caused directly by microbes entering the tissues, but also what they call *intoxication*, which is due to the absorption of the toxins produced by the microbes.

Puerperal infection is in almost all cases a wound-infection, and just as this may be slight or serious, puerperal infection may be a local affection of the external genitals of little importance, or it may be a more serious affection of the internal genitals, especially the uterus, or the whole system may be drawn into the morbid process which threatens the patient's life. The diseased conditions varying so much, the remedies to be employed will also differ considerably, and only personal

experience and sound judgment, taking all the features of the special case to be treated into consideration, can be our guide in choosing among them those from which the greatest benefit may be expected.

A.—THERAPEUTICS.

Ablutions and Injections.—Cleanliness forms an important part of all wound treatment; but sometimes it is better to leave a wound to itself, only protecting it against variations in temperature and contact with unclean substances. Plain superficial tears and abrasions of the vulva and the vagina are best left alone. They heal in a few days under the employment of my occlusion dressing, which forms part of the prophylaxis. Exceptionally, they may be dusted with iodoform, aristol, dermatol, stearate of zinc, or smeared with an ointment composed of iodoform, balsam of Peru, and vaseline.

If the lochia become offensive, vaginal injections with two quarts of some antiseptic fluid, such as creolin or lysol, in one per cent. emulsion, should be made every three hours. This procedure is simple of execution and can hardly do much harm. It is very different with intra-uterine injections. Their administration demands a certain amount of skill, which is not found in every legally authorized practitioner, which I found out when I lost one patient because an assistant perforated the lower uterine segment and injected corrosive sublimate solution into the peritoneal cavity, and when I lost another patient because another assistant connected the fountain syringe with the wide efferent tube of a double current uterine catheter instead of the narrow afferent tube and thus ruptured a thin walled uterus.

But even when the intra-uterine injection is properly made, it may do great harm. To begin with, if corrosive sublimate is used, there is danger of acute poisoning. I am, of course, aware that this drug is being extensively used for vaginal and intra-uterine injections both here and abroad; but I know also that when I wrote my paper on "Corrosive Sublimate and Creolin,"³ I collected 23 fatal cases due to corrosive sublimate, and since then I have never used this drug for injections.

³*American Journal of the Medical Sciences*, August, 1889.

Even less dangerous fluids, such as carbolic acid, creolin, lysol, or normal salt solution, in some cases cause fever. Bacteriological examinations have shown that shortly after an injection there are just as many bacteria as ever in the uterine cavity.⁴ They cannot be kept away by douching. For the application of the intra-uterine injection, it is necessary to introduce a tube, and this cannot be done without tearing open small wounds in the genital tract or inflicting new ones. I have seen cases where each intra-uterine injection caused a rise in temperature, and the patients got well after I stopped all local treatment beyond a vaginal douche. But, on the other hand, I take one thorough irrigation to be useful before curetting and in the beginning of metritis or peritonitis.

Cauterization.—When the wounds in the vulva, vagina, or cervix become diphtheritic, I cauterize them with equal parts of chloride of zinc and distilled water, applied with a wooden stick wound with absorbent cotton. The caustic is followed by an antiseptic douche. If the perineum has been stitched, all sutures should be removed as the torn surface already is or will be infected, and must be cauterized. The vaginal injections are repeated every three hours. Once in twenty-four hours the parts are inspected with speculum, and if the diphtheritic process has spread the cauterization is repeated on the new patches.

The object of this cauterization is twofold—first, to kill what microbes may be found on the surface of the wound, and secondly, to seal the lymph and blood-vessels leading into the interior of the tissues. For this purpose I have found chloride of zinc much more effective than tincture of iodine, iodoform, liquor ferri subsulphatis, or liquor ferri chloridi.

Aperients and Enemas.—In the beginning of puerperal infection the bowels should be thoroughly cleaned out, preferably with saline aperients, or if there is vomiting, or a localization in the liver, with calomel. In peritonitis I do, however, not move the bowels, except with an occasional enema, in order to avoid tearing adhesions, setting new wounds and causing violent pain. Large enemas with soap-suds or ox-gall

⁴ Kroenig—*Centralblatt f. Gyn.*, 1893, Vol. XVII, p. 979.

are very useful and may be repeated every few hours. Since the bacillus coli communis and the bacillus emphysematosus are constantly found in the human intestine, and, either alone or combined with other microbes, may cause puerperal infection, this treatment is in accordance with the newest bacteriological researches.

Food, Stimulants, and Tonics.—Since we do not possess any specific that will cure puerperal infection, it is so much more important that we should sustain the strength of the patient in order to give her a chance to throw out the poison that has entered her tissues or circulates in the blood. The patient should, therefore, have all the most nourishing food she can digest—milk, kumyss, beef-tea, oat-meal gruel, prepared invalid foods, eggs beaten up in milk or broth, and sometimes even solid food, such as ox-tongue, ham, oysters, sardines or sardelles.

Stimulants should be used very freely. In the severer cases brandy, that is cognac, or whisky should be given in doses of a half to one ounce, repeated so as to make six, eight, twelve ounces or more a day. In less severe cases, and if the patient prefers it, champagne or strong wine, such as port, sherry, tokay, angelica may be substituted, and during convalescence burgundy or budaj.

Among tonics quinine, chloride of iron, strychnine, digitalis, strophanthus, and nitroglycerine are nearly always indicated.

Anodynes.—Pain is not only unpleasant, but weakening, and it is, therefore, important to combat it, which is done with a lead and opium wash, an ice-bag, a warm flaxseed meal poultice, and morphine or tincture of opium. If morphine is not well borne, the addition of atropine in the preparation of 1 part to 1000 of Magendie's solution is often useful.

Refrigerants.—To reduce the temperature, cold is the best remedy. It may be used on the trunk and the head. It may be in the form of an ice-bag, or, if the weight is objectionable, as a rubber coil, or it may be administered on Kibbee's fever-cot by pouring cold water over a sheet covering the patient's chest and abdomen, while warm-water bottles may be applied to the feet. Or the patient may be placed in a cold pack,

which is changed until the desired reduction of temperature is obtained. Or she may be placed in a luke-warm bath at a temperature of from 85° to 90° F., which is gradually brought down to 80° or 75° F. Before the bath it is well to give a dose of brandy, and while in the bath she must be constantly watched and taken out if it debilitates her.

Iodoform Suppositories.—If the interior of the uterus is affected I leave a suppository containing 100 grains to melt in its interior and renew it daily.

Iodoform Gauze Packing.—Some prefer to apply the iodoform in the shape of gauze. If there is any bleeding, it is a good material for tamponing, but it is not good for drainage, as its meshes soon become blocked up and lose their capillarity. Iodoform is valuable by combating putrefaction on the surface with which it is in contact, and it enters very rapidly the general circulation, and is eliminated by the kidneys, so that the whole system comes under influence of this potent antiseptic drug.

Ergot and Faradization.—If the uterus is not properly contracted, ergot by the mouth or the faradic current applied to the uterus are indicated.

Resolvents.—The resolution of swelling may be favored by the application of ice, or if this is contraindicated by the low vitality of the patient, the abdomen may be covered with a warm flaxseed meal poultice. When the acute stage is over, I use Priesnitz's compresses, and still later I paint with tincture of iodine and use an application of carbolic acid, glycerine and water to prevent cracking of the skin. At the same time the patient is given iodide of potassium internally.

Internal Antiseptics.—We have already mentioned iodine. If there is a case of diphtheria in the house or the doctor has one in his practice, or bacteriological examination shows the presence of the bacillus diphtheriæ of Klebs and Loeffler in the wound secretion, a hypodermic injection with diphtheria antitoxin should be made.

For a time it was hoped that in Marmorek's antistreptococcus serum we had found a remedy that would do for cases of infection with streptococci what antidiphtheritic serum has done for those attacked by the bacillus of diphtheria; but this

hope has proved illusory. According to the report of the Committee appointed by the American Gynecological Society to investigate this substance, it is not only useless, but harmful.⁵

Frank⁶ praises subcutaneous injections of creosote alone or mixed with equal parts of oleum camphoratum, 45 minims per day, beginning with 8 minims morning and evening and increasing the dose gradually. It is very painful and has not had any other appreciable effect in my hands.

Thierry⁷ of Rouen, claims to have obtained good results in ten cases of the most severe septicemia without localization, by the hypodermic injection of oil of turpentine m xv. It forms an abscess, and in one case he produced even three of them.

Intestinal antiseptics, such as carbolic acid, naphthalin, salol, or salophen, are useful, especially when there is an offensive diarrhea.

Unguentum Credé, an ointment containing soluble silver, was extolled here some years ago on account of the supposed efficacy in a single case. Forty five grains are rubbed into the skin where it is thinnest and has least hair, which inunction may be repeated daily. I have not seen any effect from its use. But in a disease in which our resources are so limited, it is worth remembering, so much more so as there is no objection to its use.

Nuclein.—Since it was observed that Nature's chief remedy is a host of leucocytes filling the tissue behind the pathogenic and saprogenic microbes, whom they incorporate into their own body and thus render innocuous, it was rational to seek to increase the number of leucocytes—in other words, to bring about an artificial leucocytosis. The best substance in this regard is nuclein, which is obtained from yeast.⁸ There are several solutions on the market which may be used hypodermically,

⁵ *Transactions of the American Gynecological Society*, 1899, Vol. XXIV, page 104.

⁶ Frank—*Centralblatt f. Gynäk.*, 1893, Vol. XVII, No. 42, p. 979.

⁷ Thierry—*Lyon Médical*, June 26, 1892.

⁸ J. Hofbauer—*Centralblatt f. Gynäk.*, 1896, No. 17, Vol. XX, page 471. .

or by the mouth. It is apt to cause pain in the bones, especially the tibiæ, which, however, passes off within a week.

Normal Salt Solution.—Another modern remedy, which is both rational and useful, is to wash out the whole system by means of normal salt solution. This is done by injecting it into a vein laid open for the purpose or under the skin in regions where there is much subcutaneous connective tissue, especially the space between the collar-bone and the breast. The latter method—*hypodermoclysis*—should be combined with massage so as to further the absorption of the water and make room for a new quantity. From a pint to a quart should be injected, and the process may be repeated several times a day. The operation must, of course, be performed with strict asepsis, both as to apparatus and fluid. It may be done with my transfusion and infusion apparatus,⁹ which contains both canula and needle, or the needle may be attached to a fountain syringe, which works by gravity. The injected fluid permeates the whole system and is evacuated by the kidneys.

Diuretics.—Diuresis may also be furthered by drugs, especially dog grass, potassa salts and digitalis.

Diaphoresis.—When localization is situated in the kidneys, diuretics should be combined with drastic purgatives, such as croton oil, gamboge, or elaterium, and with the diaphoresis, which may be brought on either with a hot pack or a hot air bath. As profuse sweating is weakening, the patient has to be watched, and the procedure should not be prolonged beyond two hours.

Anti-emetics—Sometimes vomiting is so prominent a feature that it requires special attention. Then cocaine, hydrocyanic acid, and an ice-bag applied to the pit of the stomach have proved most useful to me. The diet should consist in small frequent doses of milk, and if even that is ejected, recourse must be had to rectal alimentation.

The Opium Plan in Peritonitis.—Years ago I published¹⁰ a

⁹ Garrigues — “Transfusion Apparatus,” *American Journal of Obstetrics*, October, 1878, Vol. XI, page 754.

¹⁰ Garrigues — “The Opium Plan in Puerperal Peritonitis,” *New York Medical Journal*, January 24, 1885, Vol. XLI, page 98.

paper on this subject. Of thirteen cases of diffuse peritonitis treated in this way, seven got well, which probably is as good a result as would be obtained by mere modern treatment.

Hypnotics.—Insomnia and restlessness are very weakening and ought to be broken with hypnotics, such as trional, sulphonal, urethan, chloral, chloralamid, etc.

Some localizations offer special indications.

Bed-sores should be prevented by the use of air cushions, elastic rings, water mattresses, and bathing with lead water. Excoriations should be dressed with the above-mentioned iodoform ointment. If gangrene develops, the dead tissue should be removed with knife or scissors and granulation promoted by dressing with camphor emulsion (10 per cent.).

In *pneumonia* I use preferably citrate of ammonia, whether it dissolves the croupous exudation or only serves as a stimulant. When there is *edema of the lungs*, dry cupping is useful, and the inhalation of oxygen may help the patient to ride out a storm.

Pleurisy is treated with tincture of iodine externally, and iodide of potassium internally. If the exudation reaches the lower angle of the scapula, it is aspirated. If it becomes purulent, a piece of a rib is excised and the cavity cleansed with mild antiseptics, such as Thiersch's solution or peroxide of hydrogen.

In *phlegmasia alba dolens*, the affected extremity is raised, painted with iodine, or gently rubbed with blue ointment, wrapped up in cotton, and slightly compressed with a roller-bandage. Circumscribed abscesses should be opened and dressed antiseptically, and in diffuse subfascial phlegmon, long incisions should be made at an early date.

Arthritis is treated according to the rules of surgery with immobilization, counter-irritation, aspiration, injection of carbolic acid, or a free incision.

B.—OPERATIONS.

In the preceding pages I have repeatedly entered the domain of surgery in the wider sense of the word, taking under consideration all such measures which the general practitioner

is likely to resort to, or briefly mentioning operative interferences which belong to general surgery.

It remains to consider those operations which are more strictly gynecological.

Curettage.—If there is any doubt as to the placenta having been totally removed, the patient should be anesthetized, placed on a table in the dorsal position and the knees drawn well up with a leg-holder. The physician lubricates his hand, inserts it into the vagina, and introduces one or two fingers into the interior of the womb. If necessary, the whole hand is introduced. In cases of puerperal infection the cervix often remains open and dilatable for many days. The other hand is laid on the fundus, steadies it, and presses it down against the internal hand. The obstetrician should go systematically over the whole inner surface of the uterus and pay special attention to both horns of the uterus, which are the most difficult to reach, but where a piece of placenta is most likely to be lodged. If so, he removes it, using his nails as scrapers. By this manual removal of the rest of the secundines that may have been left behind, we can distinctly feel the offending part and remove it much more gently than with any instrument.

If the uterus has contracted so much after childbirth that the obstetrician cannot reach the fundus with the fingers, even after having dilated the cervix with dilators, he may employ a large dull wire curette; but in these cases the prognosis for the operation is very doubtful. I do not think that I ever have seen a patient recover, when the curettage was performed after sepsis was well established in childbed. To use the curette against the endometritis, when it is known that there is nothing left in the uterus, is absolutely wrong and has cost many lives, that might had been saved by a less harsh treatment. By scraping the inside of the uterus we break down the protective wall by which Nature limits the disease and carry the pathogenic germs right into the lymphatics and capillaries.

On the other hand, I have found the curette a most useful and indispensable instrument in abortion cases, whether septic or not. In these I empty the whole uterus, inclusive of the endometrium, and pack with iodoform gauze.

Incision Above Poupart's Ligament.—When an abscess

points above Poupart's ligament, a large incision should be made parallel to the ligament. Then a finger is introduced, and if the bottom is felt to be near the vaginal vault, a counter-opening is made here and through-drainage established with a soft-rubber tube.

Posterior Colpotomy.—If, on the other hand, the abscess is within reach from the vagina, I make a transverse incision behind the cervix, separate the vagina from it bluntly, open the peritoneal cavity if necessary, place the index-finger on the abscess and perforate it with a blunt-pointed expanding perforator. After letting out the pus, the opening is dilated with Boldt's dilator. If there is any bleeding, the cavity is packed with iodoform gauze. If not, a sky-rocket drainage-tube is inserted and fastened with silver wire to the edges of the wound, or, if the abscess is smaller, a single or double rubber tube with crossbar is left in the cavity.

If the abscess is in the broad ligament, it can be opened without entering the peritoneal cavity. According to Dr. Leon F. Garrigues,¹¹ the same is the case if it is in the tube or the ovary. If only one ligament is affected the opening may be made laterally, slanting backward and outward from the side of the cervix behind a line passing transversely through the os.

Dr. Wm. R. Pryor¹² liberates all adhesions, evacuates all fluids and fills the pelvis with a Mikulicz tampon of iodoform gauze. As long as the exudation is limited to the pelvic cavity, this may be proper; but if it is situated in the abdomen, the choice lies between medical treatment and laparotomy.

Laparotomy.—Whoever has seen an autopsy on a woman who has succumbed to diffuse peritonitis, must feel tempted to open the abdomen during the patient's life, turn out those large fibrinous lumps, wash the cavity well out with normal salt solution and peroxide of hydrogen, and leave gauze drains for further escape of fluid or gas. It has also been done, but even those who have done it, admit that mortality does not seem to

¹¹ Leon T. Garrigues—"A New Method for Retroperitoneal Drainage of Pyosalpinx," *Medical Record*, May 26, 1900.

¹² Pryor—*Transactions of the American Gynecological Society*, 1899, Vol. XXIV, page 111.

decrease by this method. If the patient gets over the acute stage of her peritonitis and encysted collections of pus are found in her abdomen, they ought to be opened and drained.

Oöphorectomy.—When pyosalpinx or an ovarian abscess has been formed, some perform laparotomy and remove the diseased appendages. In my opinion this should only be done in the exceptional case that the uterus is so large that the appendages are situated high up in the abdominal cavity. Otherwise posterior colpotomy and puncture give much better results.

Hysterectomy.—Since the uterus in most cases is the starting point of the infection, gynecologists naturally have felt inclined to remove that organ; but if the operation shall help, it must be performed before the microbes have invaded the general system. At that time it is, however, hard to tell whether the invasion will take place or not, so that we may say that the operation is likely to be performed too early or too late. A uterus should certainly not be cut out, if the patient can recover unmutilated; and if septicemia is well established, the operation will not avert, but may hasten a fatal issue. I have only attempted this operation twice. In the first case, operating from the vagina a few days after confinement, I had got so far as to separate the uterus from the bladder and rectum, when the patient's condition became such that I had to stop if I did not want her to die on the table. She died three hours later. In the other case I took out the uterus and appendages per vaginam about three weeks after childbirth. It did not do her any harm, but a week later she succumbed to pleurisy, the last of her manifold localizations.

The above-mentioned Committee of the American Gynecological Society condemns hysterectomy in acute sepsis.

Looking back over the whole field and weighing the evidence adduced by different observers, I am inclined to think that surgical interference, inclusive of intra-uterine douches and curetting, has done more harm than good. Krönig in Germany, and Whitridge Williams in America, have by mere stimulating and tonic measures and diet had a mortality of only 4 or $4\frac{1}{3}$ per cent. respectively in cases of streptococcus infection, verified by cultures. In the hands of men with ex

ceptional judgment and skill, operations will sometimes save lives that otherwise would be lost; but the average practitioner will serve the interests of his patient best by abstaining even from seemingly so simple operations as the administration of intra-uterine injections or curettage.

[107 EAST SIXTY-SECOND STREET.]

Operative Removal of More Than Half of the Radius for Eburnation of the Bone.

By L. T. RIESMEYER, M.D.,

ST. LOUIS, MO.

Read by invitation before the Medical Society of City Hospital Alumni of St. Louis, Oct. 18, 1900; also before the St. Louis Medical Society, Nov. 3, 1900.

THIS specimen,¹ more than half² (the distal half) of the right radius, I removed from a patient October 26, 1898.

When you examine the specimen you will notice that it is heavier than the normal bone and of an ivory hardness and decided roughness, or unevenness, over its entire surface, excepting the facet which articulates with the ulna. On close inspection you will see that this roughness is due to small and numerous depressions—losses of substance, alternating with elevations, which are the result of a new formation of sclerotic bone-tissue. These elevations and depressions give the surface of the bone this very rough, eaten-out appearance. On the surface which articulates with the carpus you will also notice some losses of substance of varying size; the rest of this surface is more or less rough throughout. The articular facet for the ulna, then, presents the only smooth surface. The specimen is one solid mass of hard, heavy bone, the shape of which, leaving the unevenness of surface out of consideration, is that of the normal radius, with the exception that it is of markedly

¹ See Plate, Figures I and II.

² A little over six-tenths.

larger volume than that of the healthy bone in a corresponding individual, and that its diaphysis is somewhat flattened antero-posteriorly.

From a clinical and surgical standpoint, the specimen is a unique one, and together with the patient's history, makes the case which forms the subject of this paper, one of unusual interest; not only on account of its great rarity in surgical practice, with regard to the extensive eburnation, accompanied by no other degenerative tissue changes, but also for other reasons, as you will see later on when you become acquainted with the history of the case.

The patient, a married lady, 26 years of age, first consulted me on January 4, 1897. She complained of pain and swelling of the right wrist. She had been treated by several physicians, who declared the affection rheumatism and prescribed, according to the patient's statement, antirheumatic remedies, which temporarily relieved the pain on account of their analgesic properties; but the condition of the wrist—swelling, pain and interference with function, had gradually become worse, though at times there had been slight remissions in the severity of the symptoms. Upon inquiring into the patient's and her family's history, I found absolutely nothing that could furnish any clew with regard to the ailment for which she consulted me; nor was there any history of an injury to the wrist. Objective signs of lues or any other disease were also absent. Inasmuch, however, as the origin of her ailment is obscure, I shall relate to you the full history of the patient and her family toward the close of this paper.

When I examined the wrist I noticed that the articular end of the radius was enlarged and very painful upon deep pressure on the dorsum of the bone and on the outer (the radial) surface. The ulna did not appear enlarged and was not painful upon deep palpation. Deep pressure upon the carpus was also painless. Flexion and extension of the hand upon the forearm was slightly painful. The soft parts were considerably swollen and edematous, and from "mere inspection" the condition might readily have been mistaken for rheumatism. After a careful examination, however, it was plain that there was some chronic inflammatory affection of the radius, the nature of which was uncertain at that stage of the disease. Considering, however, that the disease-process was situated at the articular end of the bone, and lues usually begins in the diaphysis, the thought that the affection might be a tuberculous one was at that time most natural, though the slow growth of a tumor could not be excluded with absolute certainty.

The treatment consisted in complete immobilization of the forearm, wrist and hand in a plaster-of-Paris splint. The arm was, of course, placed in a sling. The improvement which took place was very pronounced, so that after the lapse of four or five weeks the swelling had almost completely disappeared and the attacks of pain entirely ceased. There was still pain upon pressure. The immobilization was kept up for several more months, the patient being quite comfortable as long as the immobilization lasted. Once or twice, however, there had been annoying pain while the arm was carried in a splint. As soon as immobilization was discontinued—a procedure resorted to by the patient against medical advice—pain and swelling recurred, especially during rainy or stormy weather. The pain was not confined to the time of the night. Antituberculous remedies were administered with the idea that the affection might be of a tuberculous nature. After some months the patient passed successively into the hands of other surgeons, who resorted to the same treatment as far as immobilization is concerned. What they gave internally I am unable to say. In the summer of 1898 the patient consulted me again. Pain now was more severe and more frequent, though the arm was immobilized. Once she had been ready to be operated upon by a well-known surgeon, when the symptoms suddenly abated and she concluded to defer an operation. The tenderness of the bone and pain upon pressure were also more pronounced, and the swelling as well as pain upon pressure extended further up on the forearm than when I last examined her. I placed her on iodides and mercury, with immobilization as before. For a few weeks there was again some improvement, which did not last, however, until suddenly she had several very painful days and nights. The rest by immobilization seemed to have lost its strikingly beneficial effect. There was nothing in the objective symptoms, however, suggesting a suppurating focus. I advised an operation for the removal of the diseased part of the bone, which was granted.

I operated on October 26, 1898, at the Protestant Hospital, with the assistance of Drs. Eidmann and Schisler. I chose an incision on the dorsum of the radius, an incision almost identical with that for resection of the wrist-joint. The bone was found to be in the above described condition, rough, exceedingly hard, and entirely denuded of periosteum. It was very difficult to cut into it by means of chisel and hammer. I enlarged the first incision through the soft parts inch by inch upward along the forearm until healthy bone was reached, the extensor tendons being carefully kept out of the way by blunt wound-retractors. All the soft parts around the sclerosed bone appeared entirely healthy; the edema to which the swelling of the wrist and fore-



FIG. 1.—Dorsal or posterior surface of the radius. *a*. Loss of substance due to an attempt to chisel into the bone.



FIG. 2—Articular surface for carpal bones. Photograph taken in an almost horizontal position of the bone, with palmar surface upward.

arm was due had, of course, disappeared as a result of the application of Esmarch's tourniquet, which was used for the purpose of operating bloodlessly. After the bone, which presented the reddish tint of inflammatory hyperemia, was freed from its attachments with elevátor and scalpel, a chain-saw was passed at the upper extremity of the wound around the healthy bone, thus severing the diseased from the healthy tissue. There was no suppuration anywhere; nor any other pathological condition, excepting eburnation. There was no trace of a periosteum as far as the rough bone surface reached. The carpal bones and the ulna appeared perfectly healthy. The wound was closed by buried catgut sutures and superficial silk sutures, a strip of iodoform gauze serving as drainage. The wound healed uneventfully and the patient has been entirely free from pain ever since the operation. For several weeks after the operation the arm was fixed midway between pronation and supination in a plaster-of-Paris splint and later in a lighter splint, and antiluetic remedies were administered for several months. Formation of new bone-tissue has not taken place. The patient is able to use her arm for housework, such as sweeping, for instance; also for sewing, knitting, crocheting, embroidering, etc. In order to write—and writing is at present her daily office occupation—she places a tablet of paper on her chest and writes with the forearm flexed upon the arm at an angle of about forty-five degrees and with the palmar surface directed toward her body. She can not write upon a horizontal surface because pronation is impossible. Had the forearm been fixed in the position of pronation, the patient would be able to write on a horizontal surface, but this position would not be so convenient for other purposes. She claims to be able to lift heavy articles as well as when her arm was well and without any inconvenience whatever. There is, of course, considerable deformity. For some time she was able to keep the ulna in place by a light bandage; but later—possibly through neglect, as she had to nurse many months her very sick husband—the ulna protruded beyond the carpal bones and became fixed in that position. She still uses a light bandage to keep the styloid process of the ulna from exerting too much pressure upon the soft parts by its tendency of protruding toward the ulnar side of the carpus. I presume that with a snugly fitting leather splint this downward dislocation of the ulna, respectively upward dislocation of the hand, might have been prevented, especially if the hand would have been drawn by the splint toward the ulnar side of the arm; but without the “permanent” use of such an apparatus the resulting dislocation could not have been prevented. The patient was so joyed to be without pain after the diseased bone was removed, and to be

able to use her hand and arm, that she paid but little attention to any precautions against the development of a permanent dislocation; nor, as already stated, could the dislocation have been prevented, unless she had worn a splint all her life. As far as the usefulness of the hand and arm is concerned, the result could not have been better, and the deformity the patient readily manages to keep from view by the sleeve of her dress. As the radius is the only bone of the forearm which articulates with the carpal bones, and thus supports the hand, it is but natural that when this support is gone the hand should be drawn by muscular action, as in the patient's case, upward and toward the radial side of the forearm, unless a counteraction be permanently kept up by a supporting apparatus. The case demonstrates, therefore, the effect (with regard to function and deformity) produced by removing the support which the radius affords to the hand.

* Very recently I had again an opportunity to examine the patient and she informed me that now she writes at a desk on an inclined plane, which is directed toward the right. This slanting surface she constructs by placing two or three books on her desk, one upon the other, that support the left edge of a board which rests with its other extremity upon the desk, thus forming a triangle of which the horizontal surface of the desk constitutes the base. The angle formed by this slanting surface with the horizontal surface of the desk is one of about thirty or thirty-five degrees. In writing, the hand and part of the forearm is supported on the inclined surface and the elbow rests upon the desk. I also noticed at this last examination that the patient can flex, extend, adduct and abduct the hand, though the excursions of all these motions are more limited than under normal conditions. The excursion of the hand in simultaneous flexion and adduction, however, combined with a supine motion, is at least equal to that of the normal wrist and appears even increased. In a very slight degree pronation and supination is possible. According to the patient's statement, she can do "everything" with her hand that she was able to do when her wrist was well, except "cut meat" at her meals.

I will now relate to you the history of the patient and her family as told by her when she first presented herself for examination. She was born in this country, 26 years of age, married the second time. When a child, about 6 years of age, she passed through a severe attack of diphtheria; but with the exception of this disease and the ailment for which she consulted me, she claimed to have never been sick in her life. She has one child from her first husband, a girl, then 6 years

* This paragraph was added since the reading of this paper.

of age, apparently healthy. As far as the patient knows, the first husband never had any venereal disease. There are no children from her second marriage. She claims to have had no miscarriages. From her second husband I learned that some years before he married the patient he had been treated for what was pronounced by his physician as a soft chancre, which healed upon local treatment and which was followed by a suppurating bubo in one of the groins. The sore was not followed by a skin eruption or sore throat. The patient's father is still living and is 70 years of age. Her mother died of acquired, not inherited consumption, at 56 years of age, and was sick only two years before she died. The patient's brothers and sisters are all living. She has two brothers in the forties, and two sisters in the thirties; all of them healthy. Examination of the patient for signs of lues had an absolutely negative result. The patient's second husband died a few months ago from the myelogenous form of leukemia. I did not treat him; but I had occasion to examine him several times. He presented no objective signs of lues. A microscopic examination of his blood a couple of months before he died revealed a proportion of not more than two or three erythrocytes to one leucocyte. A year previous the proportion had been about one leucocyte to five erythrocytes. Most of the leucocytes were very large, with a large, plump nucleus. They were myelocytes, which have their origin in the bone-marrow. Spleen and liver were enormously enlarged and there was a diffuse enlargement, accompanied by tenderness upon pressure, of one of the rudimentary spinous processes of the sacrum. For months before his death the urine contained a considerable amount of albumen. Some text books mention lues as one of the etiologic factors in leukemia, though such a view seems to have but little foundation, and leukemia must still be looked upon as a disease, the etiology of which is not known.

There is nothing, then, in the patient's history and that of her family, which could aid in the diagnosis of her affection, and only the condition of the removed bone decides this matter. It must be remembered that from time to time every physician meets with an unequivocal case of lues in which it is impossible to obtain a history of this affection, and where he can only be guided by objective, direct signs of the disease. The patients appear absolutely frank in their statements and willing to tell everything they know about themselves. In such cases, where the clinical manifestations are of a doubtful

nature, the probability-diagnosis of lues is either verified or rejected, according to the effect of an antiluetic therapy. In the case before us, the process of sclerosis in the removed bone was undoubtedly completed when antiluetic remedies were administered; hence their ineffectiveness. For a very extensive eburnation, like that presented in this specimen, unaccompanied by other tissue changes, can only be accounted for by lues. In tuberculosis, extensive sclerosis of bone may be found co-existent with fungous and liquefied masses, cheesy necrosis, rarefaction, etc., the soft parts, too, always being implicated at that stage of the disease. Such a widespread eburnation I observed but recently, when I resected a hip-joint for a far-advanced tuberculous coxitis in a patient fifty years of age. Large masses of bone, especially the acetabulum, were in a sclerotic condition. But the complete transformation of a large part of a bone into sclerotic bone-tissue, without an implication of the soft parts, or any concomitant degenerative changes, can not be due to anything but lues. There is, at least, no other disease known to produce such an effect. What is particularly unusual, even in lues, is the absence in the case under consideration of any visible signs of broken down necrosed tissue. *The losses of substance, which are noticeable all over the surface of the specimen, are undoubtedly due to former gummata, which have undergone necrosis and absorption.* As a rule, in lues, the sclerosed parts of a bone become sequestra by a process of necrosis and liquefaction. This, no doubt, would have also been the final outcome in the case before us. Had it not been for an unfortunate chain of circumstances, such as a total absence of a history of lues, the absence, also, of objective and subjective clinical signs of this disease, as well as the frequent change of physicians, the true condition might possibly have been recognized sooner and the loss of so large a part of the bone prevented by an early antiluetic therapy, which, as already stated, was in this case resorted to at a time when the sclerotic process was probably completed and the main tissue, from which healthy new bone could have been formed, the periosteum, entirely destroyed.

The patient has been informed of the possibility of stimulating into bone-forming activity the periosteum of the remain-

ing part of the bone by introducing into the defect sterilized bone-tissue, periosteum or bone-ashes, whereby new bone could be formed; but she is disinclined to submit to this procedure, preferring, as she says, "to let well enough alone."

In conclusion, and by way of recapitulation, I may be permitted to emphasize two of the special points of interest in the related case:

1. *The unusually large mass of sclerotic bone-tissue unaccompanied, at the time of operation, by other degenerative changes or inflammatory products (excepting edema), and surrounded by healthy soft parts.*

2. *The case furnishes an illustration of the result, as regards function and deformity, when the support, which the radius affords to the hand, is removed by exsection of the bone.*

The accompanying plate is self-explanatory.

Fig. I. presents the best view of the entire removed bone, minus half an inch at its proximal extremity, which broke off during manipulation. The entire removed bone measured five and a half inches from the tip of the styloid process to the proximal extremity. (The patient's left radius measures eight inches and three-quarters.)

Fig. II. shows the surface which articulates with the carpal bones, and less distinctly the anterior or palmar surface of the bone. As the photograph was taken with the specimen in an almost horizontal position, the diaphysis of the bone, not being in focus, appears blurred.

[2838 LAFAYETTE AVENUE]

Officers of the St. Louis Medical Society.—The annual meeting of the St. Louis Medical Society was held December 29, 1900, at which the following officers were elected for the ensuing year: President, Dr. Louis E. Newman; Vice-President, Dr. W. W. Graves; Recording Secretary, Dr. C. R. Dudley; Corresponding Secretary, Dr. W. B. Shields; Treasurer, Dr. A. R. Kieffer. The past year was a prosperous one for the Society and its condition shows a healthy vigorous growth.

Diagnostic Difficulties in Cystic Myomata of the Uterus, With Report of a Case.

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Read before the Washington University Medical Department Alumni Association, November 8, 1900.

EVEN though an operation for the removal of a pelvic tumor becomes absolutely necessary through persistent pain, hemorrhage or other symptoms, it must always be a matter of the greatest consequence for the surgeon to make an exact diagnosis of its nature, not merely for the bearing it may have on the method of operation, but also for the justifiable pleasure he must feel in having successfully solved the problem put before him. That such a pre-operative diagnosis is at times impossible no one will deny. Our knowledge of the pathology and symptomatology of these tumors has been greatly increased of late and special means of diagnosis perfected, but some cases will still defy the most careful examination. Unfortunately, moreover—and hereto may be ascribed the frequent mistakes in diagnosis—the surgeon often examines the case superficially. The indications for operation being positive, he makes his diagnosis under the knife, or perhaps even after the operation has been concluded.

To be sure, some pelvic tumors can be readily diagnosed. A large hard tumor obliterating the cervix with other symptoms to correspond will readily be declared a fibroid. An uncomplicated case of ovarian cyst may at times be easily recognized. But other cases are not so simple. Among the most difficult of diagnosis are soft myomata of the uterus. This was strongly impressed upon me in a case that through the kindness of Dr. N. J. Hawley I had the opportunity of observing and operating on recently at the Female Hospital. In brief the history of this case is as follows:

Mrs. L., 48 years of age, widow, entered the hospital September 22, 1900. Except smallpox thirty years ago, she had had no serious illness. Her menses had been regular until the beginning of her present trouble. She had had six children, all living, no fever after childbirth. Her illness dated back to January, 1896, when she began to suffer from menorrhagia, frequent urgent urination, and pain in the abdomen. She lost in weight considerably in the succeeding months. In April, 1896, she was told she had a cancer and was curetted. Was relieved of severe bleeding for eight months. Menses stopped altogether from 1897 to 1898. Then they returned with great severity, lasting from twelve to fourteen days, the patient losing large quantities of blood each time. At this time (two years ago) she noticed a lump in the lower part of her abdomen, which had been growing larger constantly. The patient at this time also began to suffer from attacks of dyspnea, angina pectoris, and edema of the lower extremities. On entering the hospital these last-mentioned symptoms were quite marked, being apparently aggravated by a severe metrorrhagia during the previous week. In August, 1900, the patient had been treated at this hospital for an extensive furunculosis, but at that time refused operation for her pelvic condition. When I saw her she was free from all traces of her furunculosis.

Physical examination showed a marked anemia, a rapid, irregular and weak pulse, and over the apex of the heart a pre-systolic murmur and thrill. The urine contained one-sixth per cent. albumen and numerous granular and hyaline casts. Bimanual pelvic examination revealed a soft fluctuating tumor slightly to the left of the median line, reaching to within half an inch of the umbilicus, not painful on pressure and firmly fixed in the pelvis. The cervix was pressed forward and upward under the symphysis. Pressure upward on the cervix caused a corresponding movement in a rather hard round body just above and to the right of the symphysis, which was consequently taken to be the fundus uteri. Near the top of the soft globular tumor and somewhat to the right another small hard nodule could be felt on deep palpation. The tubes and ovaries could not be distinguished. A rectal examination added only the fact that the tumor extended rather low down into the pelvis. The uterine sound, after encountering a slight obstruction at the internal os, passed to the right and forward to a depth of four and one-half inches. This exactly corresponded in position to what was from palpation taken to be the uterine fundus. The sound could not be passed in any other direction. Sounding the bladder showed this organ to lie higher on the right side than on the left. After considering the various aspects of the case, the diagnosis was narrowed

down to two possibilities—either a myomatous uterus with cystic degeneration of some myomata or an intraligamentous cyst of the ovary with beginning cancerous degeneration. In favor of the diagnosis of cystic myoma was the second hard lump felt near the top of the tumor (although this might also have been a cancerous nodule); also the obstruction met in introducing the sound. Against the diagnosis of cystic myoma was the great infrequency of these tumors, the palpation of a hard mass taken to be the fundus uteri, movable with the cervix and not intimately connected with the tumor itself, and finally the inability to find any normal ovaries. On the whole, there seemed more reason to consider the tumor ovarian than uterine. The cardiac condition was diagnosed as mitral stenosis.

A week after entering the hospital, the patient's condition being improved, it was decided to proceed to a laparotomy. When the abdominal cavity was opened the fluctuation in the tumor was so marked that the thought of an ovarian cyst still remained uppermost. On breaking up various omental and intestinal adhesions, however, the wound ligament and tube were found to extend to the top of the tumor and the ovaries were seen lying on either side. Both the hard lump taken to be the fundus and the one felt higher up on deep palpation, were found to be fibromyomata. A complete hysteromyomectomy with removal of the appendages on the right side was performed. The adnexa on the left side were left, owing to extensive adhesions. The wound was closed over by a continuous Lembert suture through the peritoneum. Silkwormgut was used for the abdominal incision. The first five days after the operation the patient was still in a critical condition from her heart lesion, suffering severely from angina and dyspnea. Her recovery from the operation itself was uneventful. She is now up and has no symptoms of her former pelvic trouble. The albuminuria has disappeared and the cardiac condition greatly improved. Unfortunately she is still suffering from a partial paralysis of the right arm, starting the day after the operation and due, I believe, to a faulty position of the arm during the operation. This has been treated by massage, ichthyol, etc., for the past two months with but little improvement.

Examination of the mass removed in the operation showed that the large intramural myomata in the fundus contained numerous cysts varying in size from one-eighth to three fourths of an inch in diameter. The uterine wall was greatly thickened and contained a few very small fibromyomata, but the only large hard myomata were the two already described. The uterine cavity was elongated and extended upward to the right side, ending just below the fibromyoma taken to be the fundus. A small pocket of the cavity was also ran toward the left. Dr.

E. F. Tiedemann, who examined sections of the tumor microscopically, found it to show true cystic degeneration and not merely fluid in the lymph spaces.

In reviewing this case I think it will be acknowledged that a pre-operative diagnosis would certainly have been difficult. Not that I wish to say all means at our disposal were used to arrive at a diagnosis. On the contrary, if this had been done, the correct diagnosis should have been made. It is the chief purpose of this paper to point out these means of diagnosis and in especial their applicability to the case at hand.

First let us consider the question of anamnesis. The importance of even a carefully sought history should not be exaggerated. We have too many examples on every hand of the falsehoods and ignorant misstatements made by patients. Thus Veit¹ gives an example of a woman who consulted him for absence of menses and at the same time consulted a fellow-practitioner for profuse menstruation. Even acknowledging the statements of the patient to be absolutely true, we can not always draw positive conclusions. The present case is one in point. We have a clear history of menorrhagia of increasing severity persisting for several years. This apparently significant symptom loses in value when we consider that this bleeding could be caused by an ovarian cyst undergoing malignant change as well as by a submucous myoma. The history of slight abdominal pains and various pressure symptoms, such as frequent urination or constipation, are likewise of no help in ascertaining the nature of the tumor. Finally, the age of the patient and the history of the time and rapidity of growth, while important in differentiating some other conditions, would not be applicable to the present case.

To proceed to the physical examination, the general condition of the patient should be first considered. In a case of myoma it would be apt to be one of anemia. In severe cases, however, this could hardly be distinguished from the beginning cachexia of a malignant degenerating cyst of the ovary. A blood examination would hardly throw any light on this question, as leucocytosis might be present in a severe anemia as well as in a cancerous cachexia.²

The bimanual pelvic examination is of course always the deciding point in gynecological diagnosis. According to Kelly³ it should always be made under an anesthetic. Unfortunately this is not always permitted by the patient, nor in a case like this one where the patient has a mitral stenosis do I think it would be justifiable. The examination should be made rectally as well as vaginally.

The first point in solving the nature of the pelvic condition is to find the uterus. Valuable evidence may here be gained by pressure upward on the cervix, noticing whether it causes a corresponding motion in any portion of the tumor, thus indicating the location of the fundus. This point, usually so reliable, led to false conclusions in our case. I ascribe the impulse felt over the fibromyoma on the right side to the fact that there was firm tissue between it and the cervix and the impulse could hence be transmitted, whereas between the cervix and the rest of the uterus lay the fluctuating cystic myoma which would of course transmit no such direct impulse.

Another means of differentiating the uterus from the rest of the mass is by its consistency. Myomata are, as a rule, much harder than the uterine body. Ovarian cysts, on the other hand, are much softer. When myomata become cystic, however, this difference in consistency has no longer special importance in diagnosis, as a cystic fibroma may become as soft and fluctuating as an ovarian cyst. As cystic myomata are almost invariably intramural⁴ in site, the outline of the mass may be of diagnostic help. They can thus be differentiated from a pedicled tumor like a pyosalpinx or ovarian cyst. An intraligamentous cyst, however, would have no such pedicle. It may even be intramural, as Winter⁵ points out in the following description: "In many cases there is such a close connection (between uterus and cyst) that the fundus uteri may be barely outlined or the uterus may be elongated greatly through this intimate relationship and be thinned out so that its position can only be determined by the sound, or the tumor may be so interwoven in the muscular coat of the uterus that it seems to spring forth from it." There was in my case apparently just such an elongation and immersion of the fundus into the tumor. It could, therefore, in this respect not be dif-

ferentiated from an intramural cystic myoma. When the study of the consistency and outline of the tumor is thus inconclusive, we turn to a point that in many cases is decisive. We know that in large myomata the round ligament is considerably thickened. Moreover, it lies on the anterior surface of the tumor and can thus be felt, where tubes and ovaries lying back near the sacrum are beyond the reach of palpation. The palpation of these ligaments, therefore, is comparatively easy and of great importance. As Winter⁶ says: "When the ligamenta rotunda extend toward the tumor and follow it up to its top, not only is the proof of uterine tumor made positive but the location of the fundus is determined."

Palpation of the uterus is supplemented by palpation of the adnexa, and in particular of the ovaries. The latter are recognized (1) by their ligamentous attachment, (2) by their peculiar form, (3) by their consistency, (4) by their mobility. The palpation of the ligament of the ovary is best done by Hegar's method.⁷ In this the cervix is seized and pulled downward, drawing with it the entire uterine body. If the uterus is not greatly enlarged, the examining finger per rectum will reach the fundus without much difficulty. The other hand abdominally is pressed over the fundus. If traction is now made on the tumor by an assistant, drawing it away from the uterus, the ovarian ligament (if the tumor be really ovarian) will be put on a stretch and can be distinctly palpated as a cord connecting uterus and tumor. This method would, of course, not be applicable to intraligamentous tumors. If the normal ovaries and tubes were palpated on both sides, it would be conclusive evidence that the tumor was uterine. In many cases, however, even with the aid of an anesthetic, this is impossible.

We may next proceed, but only if other means do not suffice, to sound the uterine cavity. In the hands of the inexperienced this may lead to a septic infection, or in the case of a soft myomatous uterus to a perforation of its walls. Sounding the uterus may give us valuable evidence of the location of the fundus, however, and of its involvement by a growth. If the sound be bent at various angles and a flexible sound also employed, we can thereby ascertain the exact shape and size

of the cavity. At times, however, the sound does not reach the end of the cavity, but comes to an obstruction, and so gives a false idea of the depth of the uterus. In the case I have just reported there was some obstruction at the internal os; this was thought to be a stenosis, whereas it really was the cystic myoma. Veit,⁸ while acknowledging the use of the sound in some cases, depreciates its value in a case like ours. He says: "Even if the sound passes high up the uterine canal and remains always on one side of the tumor, nothing much is thereby gained in the differentiation between a uterine myoma and ovarian tumor. Just in those ovarian tumors that are in close relationship to the uterus because they have developed into the broad ligament, is it possible for the uterus to be pushed upward and especially to be increased in length." Should the cervical canal be sufficiently dilated, an examination with the sound may be supplemented by a digital examination. Hereby the submucous character of a growth can be readily recognized. Few cases, however, permit of such examination.

Finally, a puncture of the cystic tumor may be made and its contents examined chemically and microscopically. While this is of advantage in some instances, both Veit⁹ and Winter¹⁰ consider it almost worthless in differentiating between ovarian fluid and that of a cystic myoma. Colloid degeneration, typical of the former, may be absent in papillary cystomata. Blood and its derivatives, typical of the latter, may be present in ovarian cysts. Finally, "a characteristic ovarian cell does not exist, but only peculiar changes in the columnar epithelium, which naturally could occur in either condition."¹¹

In looking at all these means and methods of examination and considering their applicability to the case at hand, it will be evident that the differential diagnosis of these two conditions hangs, as it were, on a thread. Palpation of the ovaries would have cleared the diagnosis, but this was impossible, owing to their location and to the adhesions in which they were imbedded. In two respects, however, the examination was incomplete. One was in the failure to make out the round ligaments. Even without using an anesthetic, a careful palpation should have outlined these ligaments, or at least one of them, and so confirmed the diagnosis of uterine tumor. The

second fault lay in the failure to detect with the sound the small pocket of the uterine cavity that ran toward the left side in the direction of the soft tumor. With persistent trials this might have been discovered. With these two exceptions I think the examination was as complete as was warranted under the circumstances. Besides the interest attached to the case, therefore, from a purely pathological standpoint (cystic myomata being rather unusual), I think it valuable as an example of the difficult problems that may arise in gynecological diagnosis.

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Removal of Tonsils with Special Reference to the Use of the Farlow Punch.

BY CHARLES J. ORR, M.D.,

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Read before the Medical Society of City Hospital Alumni, November 15, 1900.

CHRONIC hypertrophy of the faucial tonsil is frequently observed not only by the specialist but also by the general practitioner. The many unfortunate sequelæ which follow this pathological condition and the belief that such patients oftentimes do not receive the attention and treatment required has led me to present this subject for a short discussion this evening.

Operations on the tonsils are often opposed by the patients and not infrequently this opposition is the result of some physician who tells the patient that he or she will outgrow the large tonsils.

It is not infrequent to have patients consult us after having been treated for months with no benefit and having undergone repeated operations with no improvement. I think there is more bad surgery performed on this class of patients perhaps than any other. Some observers consider tonsils hypertrophied when they project beyond the adjacent pillars. This view is not sustained either by the clinical or pathological history.

All degrees of enlargement are considered hypertrophied tonsils. The amount of disturbance exerted by this condition varies with the natural size of the pharynx and also with the nervous temperament of the individual. Some very large tonsils causing apparently no discomfort or ill health while a very slight hypertrophy in another gives rise to very serious symptoms.

Lasegue divides hypertrophied tonsils into two classes pathologically—the hard or fibrous, and the soft or adenoid variety. The first class shows but little tendency to atrophy, and while the soft variety may often after repeated attacks of acute tonsilitis ultimately result in the formation of a hypertrophied fibrous tonsil.

The difficult or imperfect respiration, impaired quality and tone of voice, defective hearing, otalgia, catarrhal inflammation of the mucous membrane, constantly inviting acute infection to the ever-present pathogenic micro-organisms, the relaxed condition of all the neighboring structures resulting (though frequently not recognized) in impaired function of pharynx, the many reflex troubles, all demand careful and proper surgical treatment for this condition.

Failure to accomplish to our own satisfaction a complete success in the operation for removal of enlarged tonsils has resulted in a certain dislike or even prejudice to this surgical procedure. This is sometimes caused by error in diagnosis, such as removal of all or a part of a hypertrophied faucial tonsil with no marked benefit, the greater trouble being caused

by adenoid growth in the vault of pharynx. Sometimes the removal of a lobe of one or both tonsils and allowing to remain a lobe which is causing the major part of the discomfort. This latter error is more commonly committed by removing the upper part of the tonsil, it being more easily seen upon examination of a throat, the lower lobe being more difficult to get at and yet inflammation or enlargement in this part of the tonsil occasions greater pain and annoyance.

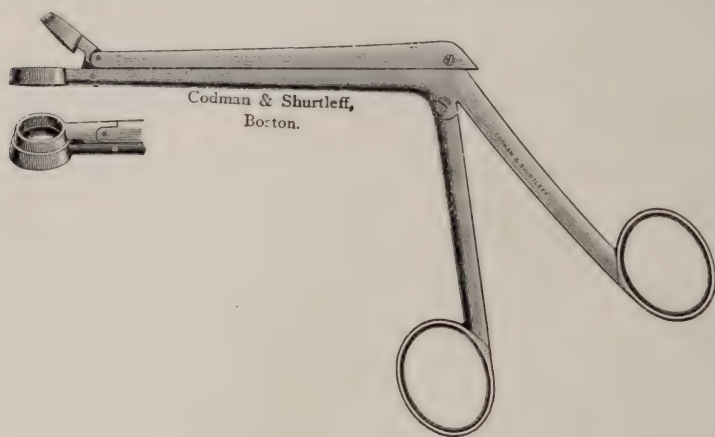
Lack of proper instruments very frequently results in failure in this operation. One must have several kinds of instruments to remove successfully the variety of large tonsils one meets with in his practice. It requires also some ingenuity on the part of the operator to be able to adapt these to the many conditions presented. Good illumination is essential. In case the patient is unable to remain fairly quiet an anesthetic is required. The tonsil is not a very sensitive organ, but any movement by the patient may cause severe damage to normal structures. I favor the use of general anesthesia, especially in children, as adenoid disease is frequently present and can be removed at the same time. Of course there is some shock and at times considerable hemorrhage; the former is not marked, and the latter can be easily controlled. Before administering an anesthetic I always take the precaution of examining heart, lungs, and urine.

In the treatment of hypertrophied tonsils a number of procedures have at various times been advocated. Chemical caustics, such as chromic acid, lunar caustic, and latterly trichloroacetic acid are no longer popular methods though still used in a few limited cases. Electrolysis and galvano-cautery puncture or cutting command but few advocates. The objection to all these methods is that the treatment is tedious and painful and that action is superficial, hence failure to accomplish completely the end desired. The removal of as much of the hypertrophied tissue as possible with safety to our patients is most desirable, both for the cure of existing disease and prevention of impending troubles.

The ecraseur or wire snare is often a splendid instrument for removing enlarged tonsils; the instrument takes up but a small part of the operator's space; the loop can be bent to fit

a variety of shapes. The hemorrhage is slight, and, if one uses the electric snare, *nil*. In very large tonsils, when all breathing space is required, or if the patient is a bleeder, no better method can be employed.

The tonsillitome or guillotine has long been a favorite instrument for the removal of enlarged tonsils. The rapidity and ease with which a large part of the tonsil is removed in certain cases would make it appear an ideal instrument. Yet, in a large flat hypertrophied tonsil with a hollowed-out center, in the long vertical hypertrophies, in segmented tonsils with large



Farlow's Tonsil Punch.

lobes, in those cases where the pillars have become adherent to the tonsils and accordingly pulled toward the median line as the tonsil gradually enlarges, in this group of cases I have found the usual surgical procedures always disappointing; while able to remove more or less of the superabundant growth too much remained. I was greatly interested in the success of some operations on this class of cases which I saw while recently attending Dr. Farlow's clinic of the Massachusetts General Hospital.

The successful removal of these hypertrophies was accomplished by the use of Farlow's tonsil punch. After removing part of the tonsil with snare or guillotine, this instrument is used as a supplemental aid to punch out the remainder of the tonsil. In the adherent variety I remove as much as possible

with tonsillotome, being careful not to injure the pillars, then remove balance with the punch; the jaws of this instrument can be forced in between the pillars and any lobe or ragged ends engaged and removed. In the soft adenoid variety of children it is especially valuable. In the hard fibrous tonsil we naturally fear hemorrhage and should prefer the ecraseur, knowing its safety as regards bleeding, though I used the punch to remove a large amount of tissue with no unusual hemorrhage. Still I should urge caution.

I recently found it admirable in removing the stump of a tonsil which had caused the patient no little suffering from recurring attacks of acute inflammation after the greater part had been removed with guillotine.

To remove only the part of the enlarged tonsil projecting beyond the pillars frequently does not give the relief the patient desires. The object of the operation is to remove as far as possible all diseased tissue if the guillotine does not reach the base. I now use the punch. Heretofore the galvano-cautery held sway, but it is much slower, more painful, and followed by a greater amount of inflammatory reaction. I do not wish to say this is always an easy operation, for the contrary has frequently been my experience. That it is an operation clearly indicated I feel sure. With a better understanding of what is required and with our modern instruments I believe the results will be more uniformly successful in the future than in the past.

[701 NORTH CHANNING AVENUE.]

St. Lukes New Hospital.—It is stated in the daily press that the trustees of St. Luke's Hospital of this city have purchased a site for a new hospital on Delmar Avenue near Belt Avenue and that as soon as a fund of \$100,000, which has largely been subscribed is completed, work on the new structure will be commenced. The encroachment of business houses and factories upon its present location has rendered it less desirable for hospital purposes. It is stated that the new hospital will be equipped with the most improved hospital appliances and that it will be as nearly perfect in all of its appointments as can be made. It is expected to be completed within two years.

Some Remarks on X-Ray Diagnosis.

By WM. W. GRAVES, M.D.,

ST. LOUIS, MO.

Read before the St. Louis Medical Society, December 22, 1900.

ALREADY five years have elapsed since Prof. Wm. Konrad Röntgen announced to the scientific world the discovery of a new form of radiation, and this length of time has not served to lessen the widespread interest engendered during the earlier months of its history. Time has not lessened its usefulness; on the contrary, with general improvements in apparatus, with better technique, and a clearer understanding of the laws which govern the light, it has become each year more and more useful as an aid in diagnosis. The application of Röntgen's light for diagnostic purposes was never a fad, but became at once an established fact. The sum of experience with it, has in a measure, indicated the proper sphere for, and the restrictions in, the use of the light

The earlier hopes and claims for this method as a means of diagnosis, that it would only be necessary to look through, see and know the nature of many obscure ailments, have been proven by time and experience to be without foundation. It would, indeed, be a gratifying fact, in an obscure ailment where the diagnosis is difficult or uncertain, if, by the aid of X-rays, it would be possible to "look through, see and know"; but unfortunately such an examination usually adds little or nothing to the previous knowledge of the case, unless the condition is one in which an X-ray examination seems to be clearly indicated. The truth of the matter is, there are only a few conditions wherein, by the use of Röntgen's light alone, a positive diagnosis may be made; therefore, the results secured by the use of the light for diagnostic purposes are, in the main, confirmatory of other means and measures heretofore employed.

An X-ray examination should be considered as a form of medical or surgical consultation, and it is pre-eminently proper

that it should be made by, and at the suggestion of, medical men only. The credulity inspired in the lay mind, by coming in contact with an electrical machine, which enables the individual to see his own bones, is such that the X-ray apparatus in the hands of the unscrupulous becomes the greatest modern instrument of quackery; therefore, I say that an X-ray examination should be made by, and at the suggestion of, medical men only; that an X-ray examination should never be suggested, or much less made, unless there are well known and clearly defined indications for such an examination. In its proper sphere, and under proper restrictions, and with the proper interpretation of the results secured, an X ray examination is, at times, of incalculable value. Only under such conditions may the X-ray apparatus become an instrument of precision and worthy of our trust and confidence.

Aside from the detection and localization of foreign substances in any part of the body, an X-ray examination is indicated when the normal relation of parts has been disturbed; as in fractures, dislocations, and sprains, and it may afford information of much value in certain diseased conditions where pathologic changes have brought about alterations in the transparency of parts.

The degree of light employed in the original exposures, from which the slides to be exhibited this evening were made, was invariably of that degree which I have previously named "radiance approaching the maximum"; that is to say, light having marked power of penetration. To secure the proper degree of light is the principal one of the many stumbling blocks on the way to successful X-ray work, and I may remark in passing, that however difficult it may be, it is nevertheless possible, and that failure to secure the proper degree of light is usually not due to the apparatus, but it is generally solely a question of technique on the part of the operator. For diagnostic purposes, it is not enough to show only the shadows of bones, but the light must have sufficient penetration to show the shadows of their gross structure as well as bones through bones clearly and distinctly, so that the smallest line of fracture or the least change in structure or density may be shown. And what is true in regard to bones is likewise true when differen-

tiations in soft structures are required. By securing light of marked penetration, the duration of exposure is greatly shortened, and a greater distance may be had between the source of the light and the patient; thus removing two factors in the causation of the so-called X-ray burn, and further, by having a greater distance between the source of the light and the patient, one element of distortion is practically obliterated.

Speaking of the difficulties in connection with successful X-ray work, let me say that there is no diagnostic procedure which requires more painstaking and more attention to detail than a successful X-ray examination. It is the popular idea, and believed in by many physicians, that it is easy to make an X-ray examination. Only those who have had experience in this line of work best know of the difficulties to be overcome. *It is easy to make an X-ray picture which will satisfy the curiosity, but it is not easy to make an X-ray examination that fully satisfies the exacting demands of diagnosis.* Röntgen's light may be, and is, of much value in medical and surgical diagnosis, but in order that its possibilities shall be fully realized, it will require work, work, work, on the part of its devotees.

There are two procedures usually employed in an X-ray examination—one fluoroscopic, and the other photographic. For the detection and localization of foreign bodies, particularly in the extremities, in detecting gross changes in or about the chest, for determining certain fractures and dislocations, a fluoroscopic examination is all that is usually necessary; but for a permanent record in the case, for depicting many details which can not be shown by the fluoroscope, for the exact localization of foreign bodies not readily accessible to the fluoroscope, and for determining the finer differentiations in bones and soft parts, the photographic procedure should invariably be employed.

It would be futile for one to attempt to cover the entire field of X-ray diagnosis in one evening, and this evening I can only hope to illustrate a very few of the many conditions wherein the application of Röntgen's discovery is of value.

[The paper was followed by a stereopticon exhibition of over one hundred slides, illustrating the varied uses for, and

the value of, Röntgen's Light in Medical and Surgical Diagnosis.]

[1943 NORTH ELEVENTH STREET.]

A Few Cases of Secretory Neurosis of the Stomach.

BY M. D. SCHMALHORST, M.D.,

ST. LOUIS, MO.

Read before the St. Louis Medical Society, December 15, 1900.

CASE I.—The first case I wish to present is one of typical hyperchlorhydria. J. W. M., male, 34 years of age. Has had stomach trouble five years; was intermittent at first, troubled for a few days or a few weeks, then there would be weeks and months when he was free from any ailment. During the last year or more there has been almost constant digestive troubles, constipation, pyrosis, a dryness in the throat, with a tendency to swallow the dryness down. Appetite is very good; has not lost in weight. During the last six months has had pains in the gastric region constantly after eating. Pain is at the pit of the stomach and comes about an hour and a half or two hours after eating and lasts from one to two hours. Nearly always feels good just before and after eating.

Examination.—Stomach not painful to pressure and not enlarged when distended with CO₂. Tongue clean except a slight coating far back. General appearance of patient is pale and skin is relaxed and flabby. Test breakfast yielded 34 c.c. of a homogeneous mass of bread and water, and when filtered there was 28 c.c. of filtrate; no mucus. This gave total acidity 92; free HCl, 78. Some dextrine and much erythrodextrine.

It was easy enough to diagnose this case without a chemical examination of the gastric contents. It might be of interest to state that the patient had been treated for gastric catarrh, but when the test meal was taken off the presence of no mucus was sufficient evidence that the wrong diagnosis had been made. The treatment was simple in this case and the patient rallied from the beginning. Nux vomica and

bicarbonate of soda were given. The nux vomica in capsules, 6 drops fluid extract, before eating, and 10 grain doses of soda six times a day, 45 minutes after and 90 minutes after eating. The direct application of the faradic current to the inside of the stomach was practiced every day for a week; then every other day for two weeks; every third, fourth, fifth and sixth day for three months, when all symptoms of dyspeptic trouble had disappeared. I lessened the dose of the alkaline gradually, but kept the nux vomica up the whole period. At the end of the three months the acidity had been reduced to 56.

Perhaps the most essential part in the treatment of hyperacidity is the proper diet. Carbohydrates will not digest in an acid medium, neither will they combine to neutralize but the smallest portion of HCl. On the other hand, all sorts of proteids are digested exceedingly well in an acid medium and combine with a considerable part of the hydrochloric acid. In consequence of these facts the diet in such cases where too much acid is secreted, consists of albumen, such as eggs and other proteids, as is found in meats of all kinds, especially game, fowl and fish. A small portion of wheat bread is quite essential and usually butter is borne very well.

CASE II.—The second case represents an atypical hyperchlorhydria, and a diagnosis should hardly be made without a chemical examination of the gastric contents. Miss. F. R., 28 years of age. Since childhood had been subject to headaches. Could always belch up food, especially if fats had been eaten. Never had any severe illness until four years ago. At this time the whole system began to relax. No desire to do anything. Always tired and wanted to rest all the time. Nothing especially wrong, but was wrong all over. This sort of indifference lasted about six months, when she began to feel as if the stomach was the seat of all the trouble. At this time she began to lose in weight—going from 117 to 93 pounds. No pain anywhere; becoming more nervous; appetite failing, and after a little while was afraid to eat because everything soured on her stomach. A burning pain appeared at pit of stomach when these sour spells came. Often when a fair meal was eaten the sour stomach with the pain did not come until towards supper time, and then she was completely undone. No medicine seemed to give relief, except lime water, or a soda powder, but was told these would do more harm than good in the long run. Could regurgitate at will; this gave relief but found that it was making her weak, so this was stopped. During the latter part of the severer symptoms she lived on cornbread and popcorn. The cornbread was baked into small cakes with salt and water. Small morsels of this were taken and masticated for a long time until it fairly dis-

appeared in the mouth, and the remaining harder part was not swallowed; likewise the popcorn. Finally grew better, but has never regained her former self. Says essence of pepsin did more good than any other medicine; did not act while she took it, but the after-effects were good. Seemed to act as a tonic.

On August 26th patient presented herself feeling as if one of her bad spells was coming on. Examination of abdomen and chest negative. Skin is pale and general appearance is one that shows lack of nutrition; back of tongue coated. Stomach dilated with CO₂ and found normal in size and position. Test meal given and after one hour taken off. Total amount of juice 26 c.c. which filtered 19 c.c. Total acidity, 88; free acid, 70; a little dextrine and plenty of erythro-dextrine. Carbohydrates were restricted and proteids advised. She was asked to eat five times a day, making three principle meals with two lunches thrown in. This advice is frequently absolutely necessary in the treatment of a long standing gastric trouble. Almost always the family physician has advised a very restricted diet and as a matter of course more or less starvation has actually taken place.

The medical treatment of this case is very interesting. She had lost faith in medicine and said that she believed if she was ever to be cured it would be by some means other than medicine. This pleased me, for I was more than glad to get an opportunity to use CO₂ exclusively. Lavage was used a few times, also the deglutable electrode, but after a couple of weeks these were discontinued and the gas used alone. The results have been all that could be desired.

CASE III.—Another case of hyperchlorhydria. This is the gentleman upon whom you have just seen demonstrated the application of the faradic current directly to the inside of the stomach. Has had digestion trouble for sixteen years. Family history good. Has lived in several large cities and has received medical treatment from many doctors. The one prominent symptom which has always been present is pain just below the zypoid. This was very painful on pressure. Has lost weight. Never has good appetite. Present condition, patient is pale, skin loose and relaxed. Examination of abdominal and chest organs negative. Tongue coated. Splashing sound can be produced down within very close margin of umbilicus. Test breakfast given and at the end of an hour withdrawn; 56 c.c. secured. Contents acid to congo paper. Free HCl reaction to Toepfer's solution. Total acidity 86. Free HCl 72. Ten c.c. milk at 100° F. coagulated by ten drops of juice in one minute. Gastrodiphane shows slight ptosis. Diagnosis, hyperchlorhydria and gastropotosis.

The drug treatment in this case has been very simple. Sodium

bicarbonate has not been taken regularly, but occasionally to relieve distress after eating. Lavage was done only a few times. To ameliorate the symptoms in this case I have relied almost wholly on the deglutable electrode. The patient is here and has kindly permitted a demonstration of this method, and in speaking for himself he will tell you that he is feeling better.

CASE IV.—The following case represents a type of neurosis often found in stomach disorders in which the nervous symptoms are intensified. Dr. K. Gave history of dyspeptic troubles off and on for a number of years. At times free from all ailment, but nervous spells come now and then when the gastric region appeared to suffer most and apparently was the seat of all the trouble. There was a tendency toward constipation. This was especially marked just before and during an attack. These lasted from a few days to as many weeks, during which time appetite was gone, skin was bathed in perspiration continually, hands and feet cold, severe nausea, and occasional vomiting. During one of these spells I was called to see the patient and found him in his office, totally relaxed and as I have described above. Physical examination negative. He called next day at my office with a test meal ready to be withdrawn. Was feeling miserable. None of the test meal could be secured. Said he generally vomited easily, so while abdomen was across a chair and the finger tickling the pharynx, we expected good results, but no test meal the first day. On the second day the effort was successful to the extent of 8 c.c. of a rather thick mixture of bread and water (very little mucus) which yielded 6 c.c. of filtrate. No acid at all, neither free or combined. Achrodextrine present. The result of this examination was enough to frighten any patient, especially a doctor. This was especially so in this case, because four years ago during an attack of this kind the attending physicians suspected a cancerous condition. I had nothing to fear, however, and assured him that it was impossible that there could be a malignant trouble in one who was so well nourished, or who had been previous to the last few days. Accordingly, a third test meal was ordered, with surprising results. The next day 22 c.c. of filtrate was taken, which showed a good congo reaction, a decided Toepfer reaction for free acid; a total acidity of 44, free HCl 30.

Here we have a juiceless stomach one day performing absolutely no function—a man dying with cancer sure, while the next day he can digest a good beef roast, and plenty of HCl and pepsin to last quite a half century longer. I have never cured a man so quickly before.

The return of normal function in this case was rapid, yet in these

secretory neuroses the condition may change one way or the other in a very few hours.

CASE V.—Achyilia gastrica. Gentleman, 54 years of age. Never troubled with dyspepsia until September, 1900. Says at this time, from some unknown reason, learned that he had a stomach, but that surely it had ceased to be a component part of his anatomy. No particular pain, but a general miserable feeling. Continual nausea. He thought he would feel better if he could vomit, but he could not. Complete loss of appetite. A homeopathic diagnosis was dyspepsia and during three weeks of homeopathic treatment lost 24 pounds and kept losing ground on a diet of beef tea and milk. I was called to see the patient and found a nervous, excitable sort of an individual, who was pretty sick, yet was not so bad as he thought he was, because he, being a very intelligent man, could not think of anything but a cancer that could cause so much trouble in such a short time. A test meal was ordered and after an hour not a particle could be taken off. A second effort was a failure, but while the tube was in the stomach I introduced a pint of water and in siphoning it off found among the particles of bread two pellicles of membrane. A third effort at test meal resulted in catching within the tube at the right moment enough of the stomach contents to make a diagnosis of achyilia gastrica, or juiceless stomach.

In the history of this case one point was omitted which possibly had something to do with the neurosis; the patient thought so. He had taken at the beginning of his trouble ten grains of calomel with eight of blue mass. Immediately following this all symptoms were aggravated. Yet I doubt if the mercury did produce any serious disturbance; had it done so it would most likely have produced a gastritis. There was no evidence of this at all. No mucus was found in the wash-water. The patient was put upon a carbohydrate diet, nux vomica, and hydrochloric acid, and a more grateful man you never saw, since improvement began at once.

CASE VI.—Enteritis membranosa. Female, 26 years of age. Referred to me by Dr. M. This case is especially interesting because the nervous condition of the stomach proved to be secondary, and I did not make a diagnosis until the patient was under observation for ten days. All this time was doing her no good at all and was afraid I would lose her. The history of her trouble began ten years ago, when she began to have dyspeptic attacks periodically without any regularity. Extreme nausea was present which gradually disappeared. At very rare times was there vomiting. Obstinate constipation; medicine was always necessary to move the bowels. Finally relied upon enemas,

but after a while these failed. For the last year symptoms have been getting worse. Attacks of vomiting more frequent. More pronounced nervous prostration. Considerable tenesmus at stool. Present condition, skin pale, chest and abdominal organs intact. Stomach does not give pain on pressure, but there is a general diffuse soreness throughout entire abdominal region on pressure. Pain is more pronounced on left side, following the descending colon. Test meal yielded 30 c.c. of juice, normal in quality. Total acidity 58, free HCl 34. I ordered nux vomica, cascara and magnesia sulphate. This was kept up for ten days, together with direct intragastric electrizations, with little, if any, benefit. I concluded to change the salts and cascara prescription, and accordingly had it added to an enema administered high up twice a day. The results of this were good. The next day the report was that a long piece of something passed from her that looked like a veil. A sample of the rectal discharge was secured and examined. These long round "veil"-like pieces in the discharge proved to be mucous cylinders. This mucus was passed in large quantities at every stool. Says she often had to go to stool when nothing but a little mucus would pass, and at these times there was rather severe tenesmus.

From the history of the patient this condition had existed at least one year, but she has never had occasion to observe the rectal discharge and therefore did not know of the condition of her colon. The treatment was as follows. Faradic current, potassium chlorate, and flushing the bowels daily with two-quart enemas, with teaspoonful of silver nitrate, a drachm to the ounce. This treatment acted well. The patient is still under observation, and now at the end of a month she has gained strength, not so pale, has never vomited, and the amount of mucus has nearly disappeared from the dejections.

[455 CENTURY BUILDING.]

Physicians in the Legislature.—The medical profession in Missouri is represented in the State Legislature by twelve members. Of these eleven are members of the lower house and one in the senate. With twelve physicians in the legislative body and one, Governor Dockery, in the Executive chair, the profession should be in a position to have its interests safeguarded, but it remains to be seen whether this is a lucky or an unlucky thirteen.

EDITORIAL.

CHANGE THE DATE OF THE STATE MEETING.

In this age and generation it is necessary to ask for what you wish or be overlooked; and while it is a well-known fact that to none of its constituent members does the body politic owe so much and reward so meagerly as the medical profession, this, in a large measure, is due to the slowness and indifference on the part of the profession to demand the consideration due it. Carelessness in claiming a just *quid pro quo* is one of its fatal shortcomings, and one for which it pays heavily.

The time is now opportune for the medical profession of Missouri to assert itself, to throw off this condition of lethargy and to present an united front in pressing its claims for consideration. By no one act can its influence be made more effective than that of holding its annual meeting in Jefferson City during the session of the Legislature, and there are no good reasons why this should not occur.

For a number of years it has been the custom of the Medical Society of the State of New York to meet at Albany, the State capitol, and always during the session of the Legislature. As a result, it has wielded a potent influence for beneficent legislation both to the profession and to the public, and in a way it stands in an advisory capacity to the Legislature upon matters in which, as a profession, it has a vital interest. The presence of an united profession at the very doors of the legislative halls has compelled a recognition of its influence, for which the law-makers of the Empire State have due respect. One evening session of the meeting is devoted to the discussion of legislative matters in which the profession has an interest. This meeting is held in the Assembly room and the members of the Legislature are invited and urged to attend and take part in the discussion, and to this they gladly respond. The concluding feature of the meeting is a banquet to which are invited the Governor, other State officials, and members of the Legislature.

It would be well for the Medical Association of Missouri to emulate the example of the New York State Society, and especially this year, in view of the interests at stake, and also since it is to meet in Jefferson City in May. The date of the meeting should be placed forward to the latter part of February, which would still be several weeks before the adjournment of the legislative body. With a little additional effort on the part of the officials of the Association and the members of the committees a programme could be arranged and a successful meeting held at that time. The objections made that that season of the year is a busy one for physicians and for that reason would be difficult for them to attend, is groundless, as proven by the success of the New York meetings where the attendance is always good.

The objections to a meeting at this period of the year are small, and, moreover, there are no good reasons why the Capitol city should not be made the permanent place for holding its annual conclave. The mutual benefits arising from a personal acquaintance of the members of the profession with our law-makers would be inestimable, and if we mistake not, the majority of physicians in the State would take a pride in being present at this time. These advantages far outweigh the possible benefits that may be derived from meeting at other places. The profession, as a body, must look after its interests, or be ignored, and its impress can be made felt in no better way than by meeting at the Capitol at an opportune time.

We are earnestly in favor of making Jefferson City the permanent place for holding the State meeting, and the time, early in February of each year. Let the meeting of this year, at least, be held while the Legislature is in session.

LOST EDITORIALS.

The whirling of the flotsam gives evidence of a deeper, though unseen agitation, and the eddies, the diminishing powers of a distant force.

A glance at the title page of the *Philadelphia Medical Journal*, of December 29, 1900, tells that editorial opinion on "the endowment

of an independent medical journal" and on "the association of medical libraries" will be found on the first editorial page of that publication. As these are matters of more than passing interest to the profession, the editorial pages are sought with anticipation of finding a trenchant criticism on these timely topics. But despite their announcement on the contents page, only a discussion of "the relative merits of sand filtration," etc., and "a paradise for old maids," meet the eye

Where are those editorials? Shall not the Archeological Expedition of the University of Pennsylvania, now delving in the ruins of the ancient Assyrian city of Nippur, be called upon to find those lost records? Or are they to remain unseen by the world for many thousand years or more, leaving only this scant trace of their one time existence? Shall they remain undiscovered until the antiquarian in the distant future, excavating in the once mighty city of Philadelphia bring to light these lost specimens of the end of the XIX century literature?

Where are those editorials? Has there been strife in the City of Brotherly Love? Dos't thee or thou, in Quakertown, know aught of the wherefore of this mystery? Was it in obedience to the mandate from the inner sanctum or was it the work of the devil?

We fear that lest they are early Sherlock Holmes'd, time will have to give to them a place with that of the unknown assailant of the legendary Billy Patterson. But we yearn to know the principles and ideals of the endowed medical journal, for "the merits of sand filtration" and the location of "a paradise for spinsters" interest us not. Where are those editorials?

MEDICAL LEGISLATION IN MISSOURI.

The medical profession in Missouri turn with expectancy to the incoming administration for a relief from a condition nearly intolerable and almost without parallel in the history of civilized communities. A condition engendered and fostered by a chief executive whose hatred to the profession and whose affiliation for and encouragement of irreg-

ular practitioners and quacks is only one of many of the unfortunate mistakes which has rendered his administration notorious.

His antagonism to the profession made it impossible to obtain by legislative enactments relief from the epidemics of quackery and charlatanry that has flourished within the confines of this State, with the result that practice of medicine here has become a by-word and a subject for ridicule. Fortunately, with the change of administration the conditions which formerly obtained will, in a measure, cease to be operative, and the time is now opportune for the profession to make an earnest effort to obtain the accomplishment of its wishes.

The Committee on Legislation of the Medical Association of Missouri made a report to that body at its Mexico meeting of two measures which it had formulated—one, regulating the practice of medicine, surgery, midwifery, etc.; the other, creating a State Board of Health on different lines from that now in existence. These, with a few slight amendments, were adopted by that body.

To a committee, of which Dr. E. L. Priest of Nevada is chairman, consisting of five members selected from the Legislative Committee, has been intrusted the duty of having these bills introduced at the meeting of the Legislature and of securing their adoption. These bills have been published in the *COURIER* (April, 1900), and briefly contain the following salient features: The one regulating the practice of medicine empowers an impartial board of health to rigidly examine applicants for license to practice in this State, both as to their preliminary and their medical education. It subjects all applicants, irrespective of their medical creed, dogma, system, superhuman intelligence or supernatural power in the healing art, and whether divinely inspired or the agents of the devil, to an impartial examination for the purpose of ascertaining the amount of medical knowledge possessed. Each will be required to show the same high grade of proficiency before license will be granted to him and no inquiry will be made regarding the source of information, nor will any diplomas be recognized. These are conditions which will be applied alike to the just and to the unjust, to the honest practitioner and to the advertising fakir.

The other bill provides for an impartial State board of health to consist of seven members. No method of practice of medicine to be

discriminated against in selecting the members, nor more than three of the seven shall have college connections. Not more than four shall belong to the same political party. The desirability of these bills are easily apparent. This bill also provides for the creation of subsidiary boards of health, one in each county, under the supervision of the State Board of Health.

These bills are worthy of the support of every honorable practitioner of medicine in the State, and their enactment by the Legislature will be of immense value to the public in general as well as to the medical profession.

Governor-elect Dockery, who is a physician and a graduate of the old St. Louis Medical College, though he relinquished his practice to take up the more remunerative occupation of banker, appreciates the needs of the profession and has given assurance that he will encourage and sanction any just and equitable legislation in its behalf.

Funds will be needed to defray the necessary expenses in securing the desired legislation. The presence of one or more members of the Committee will be required at the Capital to look after the welfare of these bills; their expenses must be paid and they should, moreover, receive some recompense for their time and services; there will also be an expense for clerk hire, printing, etc., as well as for incidental and emergency purposes. The exact amount needed can not be stated, certainly one thousand dollars would not be too much, for it is better to have too much than too little, and any unused portion could revert to the treasury of the Medical Association of Missouri, where it can be advantageously used. The St. Louis Medical Society has been asked to contribute two hundred and fifty dollars for the needs of the Legislative Committee and will gladly vote it. The Jackson County Medical Society (Kansas City) is expected to contribute one hundred and fifty dollars for its use. Every medical society in the State, large or small, general or special, should make an appropriation for this purpose, and every member of the profession, who does not have an opportunity through a medical society, should contribute something, no matter how small the amount may be. The *COURIER* will gladly forward to the Secretary of the Committee, Dr. H. E. Pearse of Kansas City, any amount sent to it for this purpose.

We believe that before the adjournment of the present Legislature the conditions which have filled the medical profession of Missouri with disgust and shame will have passed, and, we hope, forever.

DR. GEORGE M. GOULD AND THE "PHILADELPHIA MEDICAL JOURNAL."

The announcement that Dr. George M. Gould has been discharged from the position of editor of the *Philadelphia Medical Journal* by the board of trustees of that publication will be a complete surprise to the majority of the profession.

According to our present information the cause of the change in the editorial department appears to have been due to the acquisition of a controlling interest in the stock of the corporation by a lay member of the board and who was then elected general manager of the property. He, it is said, believes that the policy of the editorial management should be dominated by the business interests of the publication, which is directly opposed to the position taken by Dr. Gould, who insisted upon complete independence of the reading pages. As these opposing views could not be reconciled, a yielding of one or the other became inevitable.

Dr. Gould's successor in the editorship of the journal is Dr. James Hendrie Lloyd, who has been an editorial contributor to the journal almost from its beginning. Dr. Gould, it is stated, expects to start a new medical weekly which will make its appearance about the first of February.

The success of the *Philadelphia Medical Journal* from its inception, about three years ago, has been remarkable. From its initial number it has presented radical departures, both in its make-up and in the character of its contents, from the regulation medical weekly; and throughout its pages it bore the impress of the dominant individuality of the one who, until recently, had been the directing genius of its existence.

Doctor George M. Gould has been the *Philadelphia Medical Journal*, and its extensive circulation attests its appreciation by the

profession. In many instances he has blazed the pathway in medical journalism and has erected anew the standards of excellence, for which his competitors in the journalistic field have been compelled to strive. The success of many of his ideas, embodied in the *Philadelphia Medical Journal*, which have been quickly imitated by other journals, is a flattering testimonial to his creative genius and ability. For originality and forcefulness in this especial field, Dr. Gould is without a peer.

THE CAUSAL RELATION OF PELVIC DISEASE TO INSANITY IN WOMEN.

This question, like the ghost of Banquo, will not down. We meet with it at nearly every bend of the road in medical literature. It is the "piece de resistance" of topics for essays and discussions, polemics, and diatribes, at the meetings of both neurologists and gynecologists, and it is the "casus belli" for many a battle royal in general medical meetings where members of both ilk are present and ready for an opportunity to "shy their casters in."

This topic was thoroughly and lengthily discussed in the Gynecological Section of the American Medical Association at a meeting held several years ago, by both neurologists and gynecologists, but the net results at the conclusion appear to have been about the same as in the beginning.

The important physiological changes which take place in the female organism at puberty and the menopause shows by their marked effect on the nervous system the possibilities of the generative organs to influence the nervous system. On the other hand, the nervous system has little or no effect in producing other than mild and transient derangements of the generative organs. Influences, which doubtless arise from the ovaries, have an effect on the nervous mechanism of the body, and these influences begin at puberty and cease with the menopause. These are physiological conditions and in a normal and healthy organism should not cause pathological results. When mental de-

rangement makes its appearance at these periods the previous mental stability was undoubtedly very slight. When insanity in some form supervenes upon the puerperal state or upon diseased conditions of the female genitals, it will generally be found in those in whom there is an inherited predisposition to mental derangement. It is unconceivable that a normal, well-nourished and well-balanced mind should give way as a result of the effects on it of the changes at puberty and the menopause, or that of disease of the uterus or its appendages.

The normal influence of the ovaries on the nervous system is a physiological condition which begins at puberty and continues throughout the functional life of the female to the menopause, without giving rise to symptoms, unless interrupted by disease of the organs themselves or their removal by surgical procedure. The exact means by which this influence is carried from the ovaries, where it is generated to the general nervous system, is unknown, most probably through the medium of internal ovarian secretion carried by the blood. It is the stimulating effects of the beginning of this influence at puberty and its diminution or withdrawal at subsequent periods that give rise to symptoms referable to the brain and nervous system.

Dr. Mary Dixon Jones, in a recent article (*N. Y. Medical Record*, December 15, 1900) denies that it is possible in the absence of an inherited predisposition for the physiological changes at puberty and the menopause or even the possible disturbance that might come from diseased conditions of the female genitals, to produce mental derangements. She does not believe that the physiological processes or functions of the organs of generation ever cause madness or insanity, and that not one developmental process has a tendency to or even leads to insanity. Puberty is normal development and there can, naturally, be no insanity or psychological disease connected with Nature's normal process.

Recognizing that the brain is the organ of the mind and that abnormal conditions or diseases of the brain are the causes of insanity, it seems very improbable that disease or derangement of the genital organs can have other than a slight effect on the stability of the mental processes and that only upon those who are hereditarily predisposed thereto.

VALE!—MR. STEPHENS.

There was a time when all was well—but that was before your reign—Mr. Stephens. And now we make bold to say that the most sensible thing of which you have been guilty, during the four years of occupancy of the Governor's chair, was the congratulation extended to the people of the State in your last message, that your time in office is nearly ended. As a mind-reader you are a success; it was thoughtful of you to express our opinion for us, and the people of the State will agree with you fully that there is cause for congratulation. You have been holding your ear to the ground—Mr. Stephens.

The welfare of our profession has not been one of kindly interest to you; and your attitude toward it, in your official acts, in matters in which it had an especial interest, has been such that your name will never be mentioned by it for a place in the Hall of Fame. The pedestal, upon which you might have been placed, is broken; for the flawless marble of high esteem is not available in this instance—Mr. Stephens.

None better than the profession realize that incurable afflictions must be endured until removed by the hand of time, and it has waited until "the wicked cease from troubling" and a new official is at the helm.

But now that the time for strife has passed we cherish no resentment, and only hope that when, unwept and unsung, you step from public to private life, that fortune will be kind enough to allow you to sink peacefully into the twilight of obscurity—a reward to which you are justly entitled.

To that end we bid you God speed. Vale!—Mr. Stephens.

The Telephone as an Alarm Clock.—Telephone subscribers in this city can make arrangements with the central office to have their telephone bell act as an alarm clock. Persons who wish to take early trains out of town leave orders with the manager, and there is no danger of missing their trains. A subscriber can thus arrange to be called at one-hour or two-hour intervals during the night when he has to take medicine and much inconvenience and worry saved thereby.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of November 15, 1900; Dr. Chas. J. Orr, President,
in the Chair.*

DR. CHAS. J. ORR read a paper (see page 29 of this number) entitled

Removal of Tonsils, With Special Reference to the Use of the Farlow Punch.

DISCUSSION.

DR. GREENFIELD SLUDER felt in thorough accord with all that the essayist had said. He thought all those who had dealt with the large, flat variety of tonsillar hypertrophy will appreciate the value of an effective punch. However, he was not acquainted with this particular punch. He had some cutting right and left-handed, at an angle of 45° to the shaft, otherwise almost identical with the one shown. It serves an excellent purpose when the use of the guillotine is not practicable. The point raised by the essayist that with this punch there was little danger of injuring the carotid artery, he thought important. The McKenzie guillotine he had never used. He was unable to appreciate its advantages, probably because he had never used it. He had always succeeded with the ordinary French guillotine. This he considered almost classical in its working and everyone knew about it. He considered it of much importance that the physician be able to judge correctly when a tonsil should be removed and when it ought not. It is well known that hypertrophied tonsils predispose the patient to attacks of tonsillitis, or quinsy even. It is also a fact that children do outgrow these hypertrophied tonsils. In the meantime, however, the child's health suffers. Children do not outgrow these large tonsils

until after puberty. The repeated attacks of tonsillitis, the high fever, and the obstruction to respiration, which means oxygen starvation during childhood, prevents the child from breathing as it should during hours of rest. It must work so hard during sleep to get breath that often the child sweats every night—it has night-sweats from physical labor. As mentioned by the essayist, there are the solid, fibrinous, hypertrophied tonsils and the adenoid overgrowths, which are pathological. He believed a tonsil that interfered with respiration was also pathological and this was often seen in the pharyngeal tonsil. The adenoid tissue in the throat is a normal structure—it belongs there. It appears about the fourth month of fetal life and disappears about puberty. That is its natural history. It is found in the throats of animals; and in some animals is seen in large amount—the hog, for instance, has a large amount of adenoid tissue in its throat. So that here we are dealing with a normal tissue; and the question of its overgrowth and consideration for surgical interference arise as soon as it becomes an obstruction to respiration. The popular prejudice against the removal of tonsils he knew to be great. When it was mentioned to him he always asked the patient why he urged a specific objection. The answer usually was that it interfered with the voice—that he would never have a singing voice; or, if the patient was a singer, that the voice would be spoiled. This, the speaker said, is absolutely untrue. The removal of enlarged tonsils improves the resonance of the voice markedly. To a certain degree there is a scientific basis for the objection. The tonsil is attached to the stylo-hyoid muscle and it would interfere with singing if, in removing the tonsil, this muscle is cut. The stylo-hyoid elevates the larynx; and a singer must be able to do this in order to shorten the tube, which pitches the note higher, and if the stylo-hyoid muscle be divided, full elevation of the larynx is impossible and the singer's ability to register high notes greatly interfered with.

DR. ROBERT BARCLAY called attention to an article written by him in Hares "System of Therapeutics" on the medical treatment of middle-ear disease. In this article mention was made of the fact that large tonsils and adenoid enlargements before the time of puberty, or near it, had often been reduced by the internal administration of iodide of iron and local astringents of iodine, etc., and the symptoms entirely relieved.

He had witnessed a number of operations on tonsils and adenoid growths in children. He believed each case was a law unto itself. The subject of the proper instrument to be used had been a matter of considerable study, and he had seen them all and noted the various claims made by their supporters. McKenzie's instrument he considered safe in the mouth of a child even when struggling. As a rule, however, the part of the tonsil cut off is swallowed by the child. With the electric cautery snare, while of advantage in bleeders, is apt to go deeper than intended, and there is sometimes secondary hemorrhage or a sloughing and destruction of the parts. The Mathieu's instrument has a cutting blade between the other blades and a separate head that perforates the part of the tonsil it is desired to amputate. This instrument is absolutely secure, there is no possibility of one blade slipping away from the other. In the Mathieu's instrument the tonsil is included between between two concave surfaces, while in McKenzie's it is between a concave and a concave surface. He knew of a surgeon in this city who removed a tonsil with a volsellum and scissors, and of one who said he dug out a tonsil with his fingers.

DR. GEORGE HOMAN asked what becomes of the pieces of the tonsil when this punch is used; whether the same objection to the McKenzie instrument could not be urged against the punch. He asked that some of the aurists present inform him to what extent enlarged tonsils encroach upon the openings of the Eustachian tubes and to what extent this would interfere with the hearing. The other growth mentioned—adenoids—is very commonly a cause of impaired hearing.

DR. ORR, in closing, said he felt very much gratified with Dr. Sluder's hearty endorsement of his remarks. Just what effect upon the hearing enlarged faucial tonsils have is a matter of theory. He had stated in his paper that enlarged, hypertrophied tonsils caused a chronic inflammatory condition of the mucous membrane of the faucial pharynx and the vault of the pharynx and this necessarily affected the Eustachian tube more or less in its entire extent. Very large tonsils drag down and pull upon the tube making it more patulous and susceptible to inflammatory conditions. In every severe attack of tonsillitis, where the tonsils are very large, the Eustachian tube is more or less affected.

Nitrous oxide is used by some operators as an anesthetic and has

its advocates, but the speaker had never used it. He usually employed ether. This was administered short of complete anesthesia and the reflexes able to respond to anything falling into the pharynx and preventing hemorrhage into the trachea. He did not think that hemorrhage in the tonsil would be dangerous with either of the instruments shown, unless the spearhead on the French instrument should puncture the carotid artery. This danger was remote, however. There might be an anomalous artery or a very large pharyngeal vessel, but generally the severe hemorrhage is from the tonsillar artery. Frequently after removal there is a gush of blood and apparently an alarming hemorrhage, but this usually ceases in a few moments. If it does not cease here, as elsewhere, one must find the cause of the bleeding, find the bleeding point and pinch with artery forceps. In the use of the punch, if the bleeding is found in the connective tissue or stump of the tonsil, we can punch out another piece and get to the base of the tonsil. He not favor the use of the bistoury and had never attempted its use in these cases. A long time ago he had seen a splendid piece of work done by Dr. Sludere on a confrère. He could never, however, forget that the great surgeon Billroth had opened the carotid artery with a bistoury.

The use of iodine and iron internally and the application of astringents locally might have been all right in 1884, but he did not think it consistent work now. Medication attempted along that line or with the galvanic puncture are generally regarded as failures in the end, though exceptional cases are benefited. He said he would take the position now and retract it later on if found advisable, that we are justified in doing more radical operations in removing enlarged faucial tonsils.

About the removal of the adenoid growths, there is no question of the great benefit. While this adenoid tissue certainly is a normal structure, still in its normal state it is exceedingly small. When seen it is generally in a pathological condition, Here in St. Louis, where the atmosphere needs filtration, the coal-soot, lime-stone, dirt, etc., irritate the mucous surfaces and almost everybody has a slight catarrhal condition after a residence of five years and this irritation at this particular point results, in a measure, in hypertrophy, and removal is followed by

a considerable amount of benefit, though a patient may have enlarged tonsils without much impairment of his general health.

DR. BARCLAY asked if the tongue depressor and mouth gag were not used with the McKenzie instrument.

DR. ORR said he could not see how this claim for the McKenzie instrument was made, but ordinarily the tongue depressor is used in removal of the lower portion of the tonsil.

DR. GREEN asked in what posture the patient was placed when giving the anesthetic.

DR. ORR replied that he usually had the child lie down until fairly under the anesthetic. Then anesthesia was stopped and the child held in a sitting posture by an assistant. The tonsils were removed first and later the adenoid growth was removed. In removing a part of the tonsil or cutting through it with the guillotine, there is sometimes considerable hemorrhage. This is caused by the connective tissue surrounding the tonsillar vessel, which remains patulous, and ordinary means of controlling the hemorrhage is not successful. With the punch we get down to healthy tissue and the natural means of controlling hemorrhage is promoted. For a long time he felt unsatisfied with results in the removal of the tonsil, knowing that patients were prone to recurrent attacks of inflammation of the stump. With this instrument he has been able to entirely remove the stump, especially under an anesthetic. It is more important to remove the lower part than the upper. With the McKenzie instrument we can get well down to the base of the tongue turning slightly at an angle with the tonsil and force the part in. In large tonsils we can get off the lower segment and then in a few minutes get out the balance with this punch, making a complete removal. This can not be done with any tonsillotome. The use of the snare is often followed by marked inflammatory reaction.

ST. LOUIS MEDICAL SOCIETY.

*Meeting of December 15, 1900; Dr. Robert M. Funkhouser.
President, in the Chair.*

DR. M. D. SCHMALHORST read a paper (see page 37 of this number) entitled

A Few Cases of Secretory Neurosis of the Stomach.

DISCUSSION.

DR. MEYER had used the gastroduaphane for some time as a diagnostic aid in gastric disturbance, gastroptosis and dilatation. He had found, however, that other methods were far superior to the gastroduaphane in determining the presence of gastroptosis or gastric dilatation. The same result is given in gastroptosis as in gastric dilatation by the use of the gastroduaphane, so that taking two patients side by side, one with gastroptosis, the other with gastro-dilatation, the gastroduaphane would not show any difference. But the gastroduaphane is of great advantage in tumors of the stomach, especially in the anterior abdominal wall. He thought that the case presented was not one of acidity, inasmuch as there was found bits of mucous membrane with a number of glands present. Hydrochloric acid is absent very frequently. There are a large number of conditions in which it is entirely absent and in which meats are not digested. Sometimes pepsin is present where there is an acidity. In case of cancer of the stomach there is an acidity, yet pepsin is present there. The use of carbon oxide in inflating the stomach as a therapeutic measure is thoroughly justified, but he did not see the advantage to be obtained by the inflation of the stomach. After the contents of the stomach have been removed for chemical tests, he inflates the stomach with ordinary atmospheric air. The stomach can be nicely outlined either through percussion or by the use of the the pencil. He uses magnesium usually in preference to sodium bicarbonate in superacidity because it is a very much stronger alkaline and fifteen or twenty grains gives two or three times the strength of the alkalinity that is obtained from the use of sodium bicarbonate. It is not given before meals because it has been demonstrated physiologically that an alkaline solution brings

about acid secretion. He never uses bicarbonate of soda or alkalines before the meals because by so doing only a comparatively small alkaline effect is obtained. He did not think that a great deal of benefit is derived from the use of alkali in the stomach. He generally gives the alkali half an hour or an hour after the meal when digestion is at its height. He had obtained much better results from the use of small doses of atropine in these cases and in that way controlling the secretion in general than the simple use of alkalies.

DR. SHATTINGER said that some recent discoveries had been made regarding the secretory nerves of the stomach that are of immense physiologic importance and have great bearing upon practical therapeutics. These researches have been made at St. Petersburg by Pawlow and his pupils in the Institute of Experimental Medicine, on dogs. The observations made there have been applied to human beings in clinical cases by Max Buch, who was able to corroborate them and who found them applicable to conditions of disease. Heretofore the findings in regard to the secretory nerves of the stomach have been so contradictory that some of the most noted physiologists came to the conclusion that there are no secretory nerves to be demonstrated. This view is completely upset by Pawlow's experiments, which can be reproduced by anyone, and have by this time become classical. He has shown that secretory nerves reach the stomach by way of the pneumogastric and also by way of the sympathetic, the pneumogastric containing in addition inhibitory nerves which affect the secretion of the stomach adversely. These two sets of nerves not only pursue a course anatomically different, but are also functionally of a different nature; the fibers conveyed by the pneumogastric to the stomach might be called psychic fibers, and those conveyed by the sympathetic, secretory fibers proper. For it is found that the secretory fibers of the pneumogastric act within from four to seven minutes after the ingestion of food, and act by virtue of appetite—excited by food—that is, by the taste or even the sight of it, proving that this action is part of a psychic reflex. The secretion which is excited almost immediately (from four to seven minutes) after food is partaken of, though not necessarily entering the stomach, will last for a considerable time, perhaps a couple of hours. Later on, twenty or thirty minutes after the

food reaches the stomach, the secretory fibers of the sympathetic come into play, and these produce a secretion which is independent of appetite even independent of the food passing the mouth and esophagus. For instance, if food is placed directly into the stomach through a fistula, a secretion is excited which will continue for hours beyond the time occupied by the secretion produced by the pneumogastric. These secretory fibers of the sympathetic are excited by the food in the stomach, yet not by its mechanical irritation. It has been held by physiologists for a long time that the secretion of the stomach is started by the mechanical irritation of the food, and that tickling the mucous membrane would do the same. But this is a fallacy. The excitation seems to be of a chemical nature, yet not due to the absorption of the digestive products, but by the direct chemical action of certain materials in the food taken. Just what those materials are has not been ascertained as yet. The application of these physiological facts to clinical medicine is obvious. A case of hyperacidity may be due to disease of the pneumogastric fibers, or it may be due to disease of the secretory fibers of the sympathetic. The pathology of these conditions that has been so obscure now promises to be unveiled. But what is perhaps of still more interest, and can be utilized therapeutically even at this moment, are certain physiological facts connected with these observations. In the first place, the secretion is started immediately, and the pneumogastric secretion is more active in digestive power than the sympathetic secretion. If this active pneumogastric secretion can be started almost immediately by a psychic influence, by the sight of food, its taste, and by those environments which affect the palate, it is obvious that this can be utilized in various ways. The secretory fibers of the sympathetic, on the other hand, are excitable chemically, and already a list of foods is at hand which have this effect more than others. The one that heads the list is bouillon or a tea made with beef extract. Again, the beef tea of our forefathers, which has been given over to oblivion for lack of nutritive qualities, comes to the front rank as a dietetic preparation; it is pre-eminently an excitant of the gastric secretion which is dependent upon the activity of the sympathetic nerves. On the other hand, there are foods which tend to reduce the secretion due to the sympathetic. At the head of this list stand the

fats of all kinds—vegetable as well as animal. We have here an explanation of why it is that fats are so difficult of digestion with many people. Both these dietetic facts have been applied by Dr. Buch. The effects were demonstrated not merely by improvement in the patients, but by chemical examination of the gastric contents. He found that he could benefit a patient who had hyperacidity by bouillon, and one who had hyperacidity, by the administration of fats. These observations also explained something that the speaker had often noticed, but did not exactly understand—viz., that he could obtain very good results in some neuroses of the stomach by galvanization of the neck—ordinary cervical galvanization, according to Dr. Beard. He saw now how it was possible to thus excite the secretory fibers of the pneumogastric and benefit his patients. He believed that as good results can be obtained in most cases by faradization of the abdominal wall without introducing the electrode into the stomach at all, as by direct electrization of that viscus.

DR. SCHMALHORST said that the one case which he thought would elicit discussion was that of the woman who had lived on popcorn and cornbread diet. It was very singular for a hyperchlorhydria. This young lady had tried almost everything and apparently had stumbled upon this diet in some way, and had been keeping up nutrition with it for three or four months. It can only be explained in the way that she digested the starch in the mouth, where she held the food for a long time—ten or fifteen minutes, and then the bran was not swallowed. The popcorn was treated in the same way. Starch will be completely digested in less time than that by a healthy saliva, and it is the rarest sort of an instance in which the ptyalin is not active in the saliva.

He could not conceive of a simpler apparatus for distending the stomach than the aerostat. Dr. Rose reports remarkable results in troublesome cases of whooping-cough by the rectal inflation of CO_2 , and he was anxious to test it. In some cases, of course, he had no results, but in others the effect was remarkable; 70 per cent. of all cases benefited. He does not see how an air apparatus can be so simple or produce results like this, and by gauging the amount of gas used can determine the amount of dilatibility of the stomach. There is a perfect equilibrium established, as the patient can force the gas from the

stomach into the container by muscular contraction of stomach or abdomen.

In the diagnosis of ptosis by the use of the diaphane, inspiration will not move the diaphane up and down, because the relationship between the diaphragm and the curvature of the stomach has been lost; in dilatation this relationship is not lost, and on deep inspiration there will be a movement of the light.

*Meeting of December 22, 1900; Dr. Robert M. Funkhouser,
President, in the Chair.*

DR. WM. W. GRAVES read a paper (see page 34 of this number) entitled

Some Remarks on X-Ray Diagnosis.

DISCUSSION.

DR. LUTZ said from a medico-legal point of view the X-ray representation of fractures is liable to very gross misrepresentation on the minds of those not familiar with the clinical results of fractures. The mere fact that a photographic representation of an injured limb represents the existence of a fracture is not taken at its real value. It proves nothing as to the result of a fracture and absolutely nothing as to the healing of fracture in regard to the functional results. In other words, that the re-establishment of the contour is not the criterion of success in the healing of a fracture, but the re establishment of function approximately with that of the normal condition. He believed that no lesion of any kind ever repaired *ad integrum* when tissue has been lost. That is more particularly recognized in connection with soft tissues. The formation of cicatricial tissue and the reparation and the re-establishment of soft tissue, such as has been destroyed, are entirely different. When confronted in court by a fluoroscope picture of osseous structures, the impression made upon the mind of the laity is that because a fracture has existed, that the patient therefore is liable and entitled to receive damages not in proportion to the amount of disability produced by the injury, but in proportion to the picture presented of the deviation from the normal. Physicians are liable to be called upon to give expression to opinions in regard to this matter,

and he thought that Dr. Graves' position in the matter was eminently correct as it was conservative. If the profession would endeavor to impress these conservative views upon the laity much of the mischief which is done by those who take X-ray pictures for the purpose of showing the extent of injuries would become valueless.

DR. BRANSFORD LEWIS said that among the numerous valuable lessons taught in these demonstrations, the most impressive were the remarks about the advantage that might be taken by dishonest parties of the features found in the X-ray picture. That should be guarded against as much as possible by the profession. Unscrupulous parties could take X-ray pictures and present almost anything in them and impress susceptible individuals with the belief that they had conditions which should be removed—foreign bodies, etc., that they might make a spurious operation on them, collect a good fee and leave the patient in the same condition as before. The profession should be on the guard against such frauds.

DR. W. W. GRAVES said with proper technique it is now possible to make a positive or negative diagnosis in calculous disease of the kidney, unless the patient is of exceeding thickness. In the case of the larger stone shown upon the screen this evening, the patient weighed about 210 pounds and is over 6 feet tall.

Concerning the so-called burning and therapeutic effects of X-rays, which have been referred to by several gentlemen during the discussion, and the application of the light in the treatment of lupus, epithelioma, and cancerous growths in general, in his opinion X-rays have no therapeutic effects whatever, and hence no influence in the cure in these diseases; that the X-ray as the X-ray is not the cause of the so-called X-ray burn, nor is it in itself the curative agent when used in a therapeutic way. He did not deny that severe effects have been set up in the tissues in certain individuals from exposures incident to X-ray examinations. It is likewise true, upon the evidence of good authority, that cases of lupus have been cured from such exposures, but it is a misnomer, and is misleading to speak of the therapeutic effects of X-rays and X-ray burns when the weight of evidence clearly indicates that X-rays themselves are not responsible for the tissue changes.

When changes are set up in the tissues near to an active X-ray tube, either accidentally or purposely, there are invariably two factors present—namely, first, long exposure ; second, the source of the energy in close proximity with the part exposed ; and a probable third factor, the use of a tube giving off but feeble X-rays. By removing all three factors—namely, securing a greater degree of light, shortening the time of exposure, having a greater distance between the source of the light and the patient, it will be found impossible to get an X-ray burn or any therapeutic effects. If, then, the removal of these three factors absolutely prevent the so called X-ray burn and therapeutic effects, then the cause of these effects, when they do exist, must be found in something else other than the light ; and the cause is not difficult to find if we turn at once to the electrical energy or the electro-static field surrounding an active X-ray tube. It has been shown and proven that if a thin metal screen be placed between an active X-ray tube and the patient, and this screen be connected to the earth with a chain, that irrespective of the degree of light, its proximity to the patient, or the length of the exposure, it is impossible to get an X-ray burn. The fluoroscopic and photographic effects of the light are not changed in the least by such a procedure, but all so called burning and therapeutical effects are eliminated. The grounded screen does not carry away any of the X-rays, but only the electrical energy about the tube, hence it is a misnomer, and is misleading to speak of the therapeutic effects of X-rays.

More than one hundred and fourteen years ago Tiberius Cavallo, a London physician, cured ulcers and open sores of every kind, even of long standing, and greatly benefited several cancer cases by the application of static electricity.

The pathology of lupus at that time was not understood, but some of the many cases treated by him undoubtedly were of lupus. From the speaker's experiments with static electricity, he was of the opinion that the same beneficial results can be obtained in the treatment of lupus by the proper application of static electricity that can be secured when the patient is exposed to the electrical energy surrounding an X-ray tube ; and at some future time he hopes to report the results of his experiments in this direction. If the X-ray in itself is not

the cause of the so-called X-ray burn, or is not the curative agent when used therapeutically, then the sooner it is known the better.

So much has been claimed for the X-ray by many enthusiastic workers in this field of work that it is time that the profession at large should understand its proper sphere and restrictions in medicine; so the speaker says again, and for the reasons just mentioned, that it is a misnomer, and is misleading to speak of the therapeutic effects of X-rays.

Too Many Women in Medicine.—According to Prof. Friedrich Schauta of Vienna, there are too many women in medicine. In a recent address to the students attending his courses in gynecology, he expressed the opinion that law and other professions should be thrown open to women, because at present too many of them crowd into medicine, for which few were fitted. Of every hundred female medical students, he said, only thirty-three become physicians, the others being incapacitated by the horrors of the dissecting room and other impediments. We fear that the Professor is ungallant. Make way for the ladies.

A Decision Against Osteopaths.—According to the *Journal of the American Medical Association*, a test-case against osteopaths, which has been in the courts of Nebraska for more than a year, has just been decided in the Supreme Court, the decision being against osteopathy. The only point on which the Supreme Court was asked to decide was whether the practice of osteopathy is the practice of medicine within the meaning of the act. Chief Justice Norval, in rendering his opinion, says: "The writer is not deeply versed in the theory of the healing art, but he apprehends that all physicians have the same object in view—namely, the restoring of the patient to sound bodily or mental condition, and whether they profess to attack the malady or its cause, they are 'treating' the ailment as the word is popularly understood. We can, therefore, see no good reason why the practice of osteopathy does not fall within the provisions of the statutes under which defendant was prosecuted, as clearly so as do ordinary practitioners."

REPORTS ON PROGRESS.

MEDICINE AND THERAPEUTICS.

The Constant Quantity in the Various Climatic Treatments of Tuberculosis.

C. G. Campbell (*N. Y. Medical Record*, November 10, 1900) expresses the opinion that the principal factor beneficial to tuberculous patients in the various climates resorted to in their treatment is that they are unfavorable to the development of bacteria. This property is common to climates which in other respects present marked contrasts. He enumerates the following conditions as discouraging germ life: (a) High percentage and volume of sunlight; (b) temperature sufficiently high to promote sterilization; (c) dryness of soil; (d) porousness of soil; (e) constant freezing temperature; (f) infrequency of habitation; (g) unfavorable conditions for the formation of dust.

He considers it probable that patients improve in high altitudes in consequence of the abundant sunlight, and of the dryness and sterility of the air and soil, but in spite of the altitude, which he thinks unfavorable, *per se*.

By personal observation he finds that the climate of Southern Arizona offers notable advantages to this class of patients. The country is well protected by high mountain ranges, and the valleys present a combination of low altitude and extreme dryness of air and soil not found elsewhere on this continent. In the months of June, July, August and September the heat is extreme, but on account of the low humidity is easily borne, and many patients make decided gains in these months. Those who find the heat excessive are advised to spend the summer in the higher altitudes further north. From October 1st to June 1st no more favorable climate may be found. In the winter months the temperature in the shade at midday is seldom under 60°, and is from 40° to 60° higher in the sun.

The most distinctive feature of the climate is its dryness. The mean annual humidity of Phoenix is 36 per cent. That of New York (for comparison) is 75 per cent.

Patients in the early stages of chronic pulmonary tuberculosis are the ones most benefited. Those with large cavities, and especially with bronchiectasis, do better in a mild maritime climate. Acute general tuberculosis is not benefited by change of climate.

He emphasizes the point that the prevention of reinfection is a very important part of the treatment of tuberculosis, and that the selection of a suitable climate is necessary to accomplish this.

A New Test-Meal.

A. E. Austin (*Boston Medical and Surgical Journal*, November 8, 1900) objects to the test-meals ordinarily employed (Ewald's, Reigel's, Klemperer's) on the ground of the indefiniteness of the amount of food elements employed—nitrogen, fat, carbohydrates, and that, on account of the lack of fine division, the tube becomes clogged. He proposes instead two grammes of dried egg albumin compressed into half-gramme tablets. These are to be taken with two glasses of water and the contents withdrawn after one hour. With this meal the tube does not clog, the contents filter more readily, there are no starch granules to interfere with a microscope examination, and lactic acid, if found, is of more diagnostic importance than after an Ewald meal, since it must come from a remnant of a previous meal, and hence indicate a lack of motility.

Absorption, Motility, and Digestive Power of the Stomach.

A. N. Austin (*Medical News*, November 24, 1900) expresses the opinion that undue importance is frequently attached to the chemical composition of the gastric secretion, while the probably more important factors of absorption and motility are neglected. Referring to Bouveret's statement that "if, after an Ewald meal, more than 40 c.c. are withdrawn, it shows a slow absorption," he says this shows a certain confusion between absorption and motility. That the amount must be taken as the measure of motility, but that absorption must be determined by the residual albumose peptone one hour after a meal con-

sisting of a definite amount of albuminous food. For the method of determining this he refers to his article in the *Boston Medical and Surgical Journal*, Vol. CXLII, No. 10. He concludes that no examination of the stomach is complete without testing its absorptive power, and that retardation of absorption does not occur with simple hypotony without dilatation.

The Hydriatic Treatment of Tuberculosis.

J. H. Kellogg (*N. Y. Medical Record*, November 12, 1900) reports eight cases of pulmonary tuberculosis, of which number seven made an apparent recovery. This result the writer attributes largely to hydriatic treatment, though conceding the benefits of climate, the patients being treated at Boulder, Col. By this treatment fever was quickly subdued, appetite and digestion improved, and the patients soon began to gain flesh and strength. Illustrations of the manner of applying the pack are given, but the method is not described in as much detail as we would wish.

Observations Upon the Symptoms and Treatment of Hyperacidity of the Stomach.

Henry F. Hewes (*Boston Medical and Surgical Journal*, November 29, 1900) bases his conclusions upon a study of fifty-eight cases of uncomplicated hyperchlorhydria. In practically all cases distress was present—a sense of uneasiness in the stomach, nausea, burning sensation or pain. In twenty-one cases this distress appeared within thirty minutes after ingestion. In the remaining cases in from one to three hours after food. Raising or desire to raise gas occurred in fifty cases, heartburn in twenty-five, pyrosis in twenty. Vomiting occurred regularly or occasionally in seventeen cases. In thirty cases the symptoms were relieved by taking food. Distress coming on some time after ingestion and relieved by food or an alkali, is considered typically symptomatic of hyperacidity of the stomach. When the symptoms are not conclusive, we must resort to examination of the stomach contents. The author considers the condition to be in most cases essentially a neurosis, and while endeavoring to relieve the symptoms due to hyperacidity by alkalies and diet, recognizes the importance of restoring the

patient to his normal condition as regards nutrition and nerve tone by hygienic measures, and medicinal tonics when indicated.

Gastroptosis.

George Roe Lockwood (*N. Y. Medical Record*, December 1, 1900) concludes from a study of forty-five cases of this condition as follows:

1. That in the great majority of cases an adequate cause for the gastroptosis is not discoverable.
2. That gastroptosis does not of itself in an uncomplicated form produce symptoms.
3. That the displacement of the stomach, however, is a predisposing cause of a variety of gastric neuroses of sensation, motion, and secretion.
4. That these neuroses are usually induced by some definite mental or physical strain.
5. That the displacement of the stomach is a strong exciting cause for muscular atony; that the atony is the most common cause for the symptoms presented.
6. That a complicating atony is associated with a more or less profound neurasthenia, and that a direct relation exists between these two conditions.
7. That gastric acidity is increased in direct proportion to the atony, unless counteracted by gastritis.
8. That mild degrees of gastritis are apt to occur in stomachs that are displaced, but that the symptoms are neither severe nor persistent.
9. That gastritis occurring in atonic and displaced stomachs reduces the excessive acidity of these cases and seems to modify the severity of the symptoms.
10. That atonic dilatation without mechanical hindrance is exceedingly rare.
11. That dilatation, or better, muscular insufficiency, may occur in gastroptosis from duodenal kinking, from arterio-mesenteric constriction, or from pyloric spasm.
12. That pyloric spasm is common in displaced atonic stomachs with hyperacidity and may lead to temporary dilatation.

13. That in a large number of cases, inattention to the condition of atony, of neuroses, and of gastric secretion has led to an unsuitable, insufficient diet which reacts both on general nutrition and on the local conditions within the stomach.

14. That surgical intervention is applicable only to cases in which dilatation exists.

HOGG.

OBSTETRICS AND GYNECOLOGY.

Cesarean Section for Placenta Previa.

A. Palmer Dudley of New York (*N. Y. Medical Journal*, November 3, 1900) believes that Cesarean section, as practiced in modern times with due regard for all the essential details of asepsis, is an ideal method of treatment for placenta previa; that there is a smaller chance for infection and less risk of life to the mother and to the child from hemorrhage, and a far greater chance for the child to live after it has reached the period of viability.

He calls attention to the fact that an anesthetic, especially chloroform, jeopardizes the life of the child *in utero*, and recommends the administration of nitrous oxide gas and oxygen combined, which he claims is thoroughly efficacious and will minimize the danger to the fetus. After an abdominal incision of not more than six inches, the womb is not everted but a piece of elastic tubing is passed around the uterus at the cervix below the tubes and ovaries for the purpose of compressing the uterine and ovarian arteries. This elastic ligature is drawn tight and held by an assistant, while another assistant holds the upper part of the uterus against the abdominal wound. No sponges are used and the wound is constantly irrigated with hot normal salt solution. The womb is opened, the child, placenta, membranes, etc., removed; if the placenta is cut through in opening the uterus, the cord is grasped to prevent loss of blood from the child, which is then removed as rapidly as possible. The wound in the uterus is closed with three rows of continuous catgut sutures. The traction on the elastic ligatures is continued until the uterine incision is closed. The abdominal wound is closed in the usual manner.

He believes that the operation should be done early before the patient is exhausted. But that when the mother's vitality has been seriously lowered by either septic infection, prolonged labor or complicating conditions, the mortality of the Cesarean section is so high that it is an unjustifiable operation and advises resort to other methods. When, however, the mother is in good condition, uninfected, and not exhausted by long labor or prolonged efforts at instrumental delivery, the Cesarean section is so safe an operation that it may be resorted to unhesitatingly.

Care of the Patient Previous to Confinement.

Edward P. Davis of Philadelphia (*N. Y. Medical Record*, October 20, 1900) calls attention to the necessity of estimating the perfection of the patient's assimilation, to detect failures in excretion and by examination to ascertain as far as possible the condition of the excretory process. Estimation of the amount of water is of much importance in that it shows the quantity of solid nitrogenous matter excreted, and its presence in considerable amount indicates that assimilation is well performed and that nitrogenous food is well digested and not broken up into irritating and poisonous compounds. The multiplication of the last two figures of the specific gravity by 2.33 will give approximately the number of grammes of solid matter in one thousand cubic centimeters of urine.

He claims that no drug so efficiently influences the throwing out of solid water as calomel and in doses of $\frac{1}{20}$ grain night and morning, or in smaller doses of $\frac{1}{100}$ grain three times a day which he finds is most successful. This he has continued for several weeks without signs of mercurial irritation and with or without the use of salines.

Under the use of calomel the percentages of solids in the urine increases, the pulse tension lessens, and the symptoms are much improved. When there are symptoms of insomnia, restlessness, and headache, treatment to increase elimination is indicated, and not sedatives, especially bromides. These conditions quickly disappear under the use of eliminative measures.

DUDLEY.

OPHTHALMOLOGY.

Use and Abuse of Potassium Iodide in Ophthalmic Practice.

Albert Rufus Baker (*Jour. Am. Med. Ass'n*, November 17, 1900) gives his experience with potassium iodide in intraocular diseases, and draws the following conclusions :

1. Iodide of potash should generally be administered in rapidly increasing doses until from 1 to 500 grains are given daily.
2. The drug should always be given after eating, and well diluted with water.
3. Frequent hot baths are essential to the best results in the use of the remedy.
4. Not infrequently large doses will be tolerated when smaller ones can not be well taken.
5. The use of the large doses is not limited to syphilitic cases.
6. Large doses are indicated in optic neuritis, ocular paralysis, choroiditis, serous iritis and in relapsing iritis, clyclitis and interstitial keratitis.
7. It is contraindicated in gray atrophy of optic nerve.
8. Albumin in the urine, generally speaking, is a contraindication for large doses of iodide.
9. Young children do not take the iodide kindly, and it should be administered cautiously.
10. The remedy is of doubtful value in early syphilitic iritis.
11. Large doses are of doubtful utility in the removal of post-operative exudates, but should be given further trial.

Lessons From a First Series of One Hundred Cataract Operations.

F. T. Rogers (*N. Y. Medical Journal*, October 6, 1900), in this series did simple extraction in eighteen cases, and the combined operation in sixty-six. He prefers the method with iridectomy for the following reasons :

1. In one sense it simplifies the operation, rendering it easier to expel the lens and soft cortical matter through the large coloboma, and lessens the frequency of secondary cataracts.

2. There is less danger of prolapse of the iris.
3. The clean excision of the iris is no more likely to cause inflammatory action than the traumatism to which it is subjected by the expulsion of the lens in simple extraction.
4. It requires less skill and delicacy of touch, and thus lessens the dangers of complications.
5. With care in replacing the angle of the excised iris and any bits of capsule, there is no great danger of incarceration in the lips of the wound.
6. It does not materially affect the mobility of pupil.
7. While the cosmetic effect is not so perfect as in the simple extraction, the upper lid so completely hides the coloboma that, even if the cosmetic effect was the desideratum instead of acuity of vision, there would be little in favor of the simple method.

From a study of these cases the author draws the following conclusions:

1. More attention should be paid to the general condition of the patient, and the presence of any systemic disturbance should influence the prognosis.
2. All operative procedures on the crystalline body should be done under the best possible illumination.
3. Providing that it is large enough, the exact size of the corneal section does not materially influence the result.
4. The combined operation is the safest and the easiest for the operator of limited experience.
5. The most frequent complications, iritis, and iridocyclitis should be combated by the early instillation of atropin, and their existence does not necessarily prevent an ultimate good result.
6. Dissection of the capsule can be done with comparative safety and materially increases the acuity of vision.
7. Infection of the wound does not in all cases destroy the sight, and careful and assiduous treatment may save an apparently doomed eye.
8. The experience gained in the first series of operations has, besides improving the technique of operation, impressed me profoundly with the possible dangers which may arise and prevent me advising

operative procedures so freely as I have done in the past without a frank statement to the patient of the possible outcome.

9. For some reason I have had more iritis in these cases than I should, but whether due to defective skill in operating, or insufficient care in the after-treatment, I am unable to decide.

Implantation of an Artificial Vitreus; Mules' Operation.

M. L. Foster (*N. Y. Medical Journal*, December 6, 1900) refers to three cases, two of which were operated on by himself. He finds that the great advantage of Mule's operation is that the glass ball within the sclera maintains the muscular apparatus of the eye in nearly its normal position, and so seems its better action, which results in better motility of an artificial eye when properly fitted. The most serious objection he finds to be the prolonged convalescence, which lasts from ten to fifteen days—about double the time of that following enucleation. Failure of the operation with extrusion of the glass ball sometimes happens. It may be the result of the insertion of too large a glass ball, suppuration or the absorption of catgut sutures in the sclera before the edges of the wound have become firmly united. It seems wise to use the smallest-sized ball in every case, and to use silk to unite the edges of the sclera.

The Significance and Pathology of the Argyll-Robertson Pupil.

Wilfred Harris (*British Medical Journal*, September 29, 1900) makes the following points: Though the Argyll-Robertson pupil is chiefly seen in locomotor ataxia and general paralysis, it may be found in many other diseases. It should be looked upon as an almost certain sign of antecedent syphilis, either congenital or acquired. The author has seen it in juvenile locomotor ataxia and general paralysis with marked evidence of congenital syphilis, in progressive muscular atrophy, in lead poisoning, aortic aneurysm, hemiplegia, syphilitic meningitis, ataxic paraplegia, nuclear ophthalmoplegia, choroiditis, and in numerous instances in patients who presented themselves with all manners of symptoms, but showing no signs of ataxia or anesthesia, and with normal or even brisk knee-jerks, but in almost every instance with a clear history of syphilis. It seems most probable, in the absence

of direct pathologic evidence, that the Argyll-Robertson pupil is due sclerosis of the non-decussating Meynert's fibers, on one or both sides, according as the loss of light reaction is unilateral or bilateral, rather than due to any nuclear degeneration

PEDIATRICS.

The Varieties of Membranous Anginas Produced by Micro-organisms Other Than the Klebs-Loeffler Bacillus.

Bissell (*Buffalo Medical Journal*, December, 1900) asserts that occasionally pseudomembranous anginas, which clinically resemble true diphtheria, are produced by the streptococcus pyogenes and the micrococcus of sputum septicemia. He reports two cases, one of which was fatal, and the other was saved by antistreptococcic serum. Diphtheria antitoxin had absolutely no effect. In another fatal case the micrococcus of sputum septicemia was found, but no Klebs-Loeffler bacilli. He concludes as follows :

1. The streptococcus pyogenes and the micrococcus of sputum septicemia [micrococcus lanceolatus] can produce membranous anginas accompanied by physical disturbances sufficient to result in death.
2. The oidium albicans produces pseudomembranous exudates easily mistaken for a Klebs-Loeffler inflammation.
3. The only positive means of determining a Klebs-Loeffler infection is by microscopic methods.
4. From a sanitary standpoint, as regards quarantine, anginas due to the streptococcus pyogenes, micrococcus of sputum, septicemia, and the oidium albicans, require little consideration.

Roetheln.

Koplik (*Journal of the American Medical Association*, November 10, 1900) discusses roetheln from the standpoint of differential diagnosis from measles. The disease may occur at any age. The first signs are usually some enlarged lymph-nodes situated posterior to the sternomastoid. These may be found several days before the eruption appears. The period of incubation varies from fifteen to twenty days. The exanthema of roetheln resembles that of measles. Clinically, it is

usually indistinguishable from it. There are, however, no prodromal symptoms, or very fleeting. Some angina and swelling of the tonsils is usually present. The soft palate frequently is covered with rose-colored spots. But the mucous membrane of the cheek is pink and never shows the rose-red spots with bluish-white center (Koplik's spots) as in measles. This is the principal differential sign. Desquamation is usually absent.

The Etiology of Anterior Poliomyelitis.

In an editorial (*Pediatrics*, November 15, 1900) this subject is discussed. Reference is made to the older theory that certain toxins from infectious diseases cause this degeneration. Recently Auerbach, from a study of eleven cases, inclines to the belief that meningitis, poliomyelitis, and encephalitis are due to a varying intensity of action of the diplococcus intracellularis.

ZAHORSKY.

SURGERY.

The Restoration of Motility in Joints Which Have Been Ankylosed.

Chlunsky (*Centralblatt für Chirurgie*, No. 37, 1900) begins his article with the remark that we have up to date been in possession of no effective method of remedying ankylosis with contraction. The author reasons that the insertion of soft tissues between the ends of fractured bone leads to a pseudo-arthritis and therefore that the same substance in a joint cavity must prevent ankylosis. In a large joint it is practically impossible to introduce the desired amount of soft tissue, so he tried foreign substances. He resected the hind knee-joints of dogs and rabbits and fitted over the ends of the long plates of celluloid, silver, zinc, rubber or collodium; in every case the motility of the joint was preserved. The animals were killed from three weeks to four and a half months later and the affected joints found to be intact. The rubber and celluloid plates were found in good condition, while those of silver and zinc were worn out. Seeing that these plates had accomplished all that was desired and fearing that they might in future lead

to unpleasant complications, the author decided to replace them by resorbable material. In another series of experiments he used magnesium, with the same satisfactory results, and the additional gain that at the end of eighteen days the magnesium had been absorbed.

On a New Method of Operation for Exstrophy of the Bladder.

Carl Beck (*N. Y. Medical Journal*, Vol. LXXII, No. 8) gives a short résumé of the operations which have been attempted for the cure of this condition, himself proposing the following: He commences his operation by freeing the margins of the protruding bladder, then cuts off the recti muscles from their lower attachment improvising from them an anterior bladder-wall. Beck accomplished the same result a second time by doing a somewhat more complicated plastic operation upon the recti. The article contains no hint as to the practical success of these operations, the same being promised in a later article.

A Study of One Thousand Operations for Acute Intestinal Obstruction and Gangrenous Hernia.

Gibson (*Annals of Surgery*, October, 1900) furnishes an article which, from its statistical nature, must be read in the original to be fully appreciated. Some of its principle data, however, are the following: Cases collected, hernia 354; intussusception 187; bands 186; volvulus 121; Meckel's diverticulum 42; gall-stones 40; internal openings 34; foreign bodies 16; miscellaneous 20. The mortality in intestinal obstruction from various causes was 40 per cent. Intussusception occurs five times in the male to two times in the sex. Where resection and suture have been attempted the death rate has been 74 per cent.; where an artificial anus was made, 77 per cent. The fatality in each of the following conditions has been as follows: Intussusception 51 per cent.; bands 41 per cent.; volvulus 54 per cent.; Meckel's diverticulum 62 per cent.; gall-stones 57 per cent.; foreign bodies 25 per cent.; protrusion of bowels through internal openings 62 per cent. In cases of gangrenous hernia the total mortality has been 34 per cent. The author concludes that 3.31 per cent. of all herniæ are subject to accidents, chief of these being strangulation. This is more frequent in femoral than inguinal hernia and here also is the mortality greatest.

BARTLETT.

BOOK REVIEWS.

Atlas and Epitome of Gynecology. By DR. OSCAR SCHAEFFER, Privat Docent of Obstetrics and Gynecology in the University of Heidelberg. Authorized translation from the second revised and enlarged edition. Edited by RICHARD NORRIS, A.M., M.D., Surgeon-in-Charge Preston Retreat, Philadelphia; Gynecologist to the Methodist Episcopal Hospital and to the Philadelphia Hospital; Consulting Gynecologist to the Southeastern Dispensary and Hospital for Women and Children; Lecturer on Clinical and Operative Obstetrics, Medical Department, University of Pennsylvania. With 207 colored illustrations on 90 plates, and 62 illustrations in the text. Price, cloth, \$3.50 net. [W. B. Saunders & Co., Publishers, Philadelphia. 1900.

The title of this work tersely and correctly describes its character. It is indeed an atlas and an epitome of gynecology. As an atlas it is *superb*; as an epitome it is excellent.

On opening the volume one is immediately impressed with the excellence of the illustrations. The faithfulness of the colored plates (which are numerous) in reproducing the appearance of the various diseased conditions is remarkable. To borrow a simile used by photographers they might be called "almost speaking likenesses." This, to be sure, is the feature of the book, but these plates, ninety in number, are, indeed, works of art, and will give to the searcher in its pages an idea of gynecological conditions, the correctness of which can not be surpassed save by that of the actual condition itself. This feature alone makes the book a valuable one.

The reading pages are devoted to a clear and concise condensation of gynecological knowledge, complete, without containing any unnecessary matter and, on the other hand, without sacrificing its usefulness and thoroughness to brevity. This is an excellent work of an

unique character. It occupies a place alone, because it is different from other books on this subject.

DUDLEY.

Bacteriology and Surgical Technique for Nurses. By EMILY M. A. STONEY, M.D., Superintendent of the Training School for Nurses, St. Anthony's Hospital, Rock Island, Ill.; Author of "Practical Points in Nursing," "Practical Materia Medica for Nurses," etc. Illustrated. Price, Cloth \$1.50 net. 1900. [W. B. Saunders & Co., Publishers, Philadelphia.

This is a neat little book of 190 pages; there are twenty-two woodcuts and four full-page plates in illustration of the various appliances with which the nurse must be familiar. In spite of its small size this volume contains a surprisingly large amount of useful information, indeed many surgeons could read it with profit.

For the sake of convenience it is divided into eighteen chapters, on bacteriology, antiseptics, sterilization, instruments, anesthesia, dressings, inflammation, preparation of operation room and patient for operation, care of patient after operation, signs of death, etc.

The cost of this neat little work is \$1.50, and we can hardly see how the same amount can be better invested by one desiring to acquaint himself or herself, as the case may be, with the elements of surgical nursing and care.

BARTLETT.

Announcement.—Herbert S. Stone & Co., of Chicago, announce that they have in preparation, and will soon issue the following important work: "A Text-Book on Special Surgery," for practitioners and students, by Dr. Franz Koenig, translated from the seventh German edition, which has but recently appeared, by Arthur B. Hosmer, M.D. and edited by Christian Fenger, M.D.

It is the authorized translation, and will consist of three large octavo volumes on an especially fine grade of plate paper, and each volume will contain in the neighborhood of three hundred illustrations.

United States Dispensatory.—Dr. H. M. Whelpley, Editor of *Meyer Brothers Druggist*, wishes a copy each of the first and second editions of the United States Dispensatory. Address him at 2342 Albion Place, St. Louis, Mo., stating condition and price.

NOTES AND ITEMS.

Tobacco Prohibited in Ethiopia.—Menelik Emperor of Ethiopia, has prohibited the use of tobacco in his dominions under severe penalties, and has been awarded the first prize by the French Society against the Abuse of Tobacco. This edict, it is said, was promulgated immediately after the royal herald had proclaimed from the outer gate of the palace that the discovery of the villian who purloined the Emperor's box of pure Havanas would be rewarded by many licks.

A Striking Tale.—The lay press recently contained the following story, sent out from Binghampton, New York: "A lumberman was accidentally hit on the head by an ax in the hands of his partner, to whom he was relating a story. The man was made unconscious and remained in that condition for a month. He was then removed to a hospital where a Binghampton surgeon removed the particles of bone that were pressing on the brain, with the result that the man regained consciousness, resumed the relation of his story and at the point he had broken off." This shows the striking effect of a good story.

The X-Ray as a Hair Tonic.—From Vienna comes a report of the cure of a case of *alepecia areata* of three years' standing by the Röntgen rays. After six sittings of fifteen minutes each, the spot exposed to the rays, it is alleged, became covered with normal hair, while there was no change in the bald patches not exposed to the rays. Kienboeck, who exhibited the patient two months later, states that "soft" tubes have been much more effective than "hard" ones in his experience. If the Röntgen ray is useful for the alopecia caused by early piety, we wish to lay in a supply of "soft" tubes before the advent of the busy season of the *musca domestica*, or common house fly.

He Did His Work Well.—According to the *N. Y. Medical Record*, a Tennessee physician had been attending a funeral, probably of one of his rival's patient's, and, after the burial services were over, had strolled with a number of people among the graves of the colored population in a portion of the cemetery laid off for them. He noticed that the children's graves were decorated with almost anything and everything—a little chair, a broken top, and numberless toys that the

departed pickaninny had possessed while living. Over one little grave the people lingered, and a variety of vials and boxes freshly labelled, "Take one teaspoonful every two hours till relieved." "Take one powder every three hours till quiet," attracted their attention. Much to the doctor's surprise, he found his name attached to each label.

A Bill to Prohibit Non-Residents from Practicing Medicine by Proxy.—A bill has been introduced in the Missouri Legislature by Senator Rollins of St. Louis, which aims to prevent non-residents from practicing medicine by proxy, such as is now done by advertising quacks. The bill is as follows :

"Any person holding himself or herself to the public as maintaining an office at any given place in this State, where he or she will treat the sick, and it shall be shown that said person does not actually and in person do so at the place represented, or that he or she, is a non-resident in the State, and does not in person practice the profession of medicine at the place represented, shall by the Board be adjudged guilty of unprofessional and dishonorable conduct in the meaning of the preceding section ; and it shall be the duty of the State Board of Health to revoke the certificate held by any and all such persons."

Suggested Change of State Meeting.—At the meeting of January 19, 1901, the St. Louis Medical Society unanimously adopted the following resolutions regarding the change of date of holding the State meeting.

WHEREAS, The Missouri Medical Association will hold its annual meeting in Jefferson City, May 21, 22 and 23, 1901, and

WHEREAS, It is generally believed that the best interests of the profession will be promoted by holding the annual meeting of the Association there during the session of the Legislature, therefore, be it

Resolved, that the St. Louis Medical Society, as the representative body of the profession in St. Louis, and interested in the general welfare of the profession, do earnestly ask and urge the officers of the Missouri Medical Association to change the date of meeting to that of February 26, 27 and 28, 1901, and that immediate and active steps be taken to advertise the change of the date and to promote the success of the meeting.

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ORIGINAL CONTRIBUTIONS.

Influenza in Infants.

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TEXT-BOOKS on pediatrics published a decade ago contain nothing on influenza as it occurs in infants. But we know now that influenza almost invariably attacks infants during the prevalence of an epidemic. The general practitioner is prone to overlook many mild cases, diagnosing the disorder as coryza, laryngitis, bronchitis, gastritis, etc. On the other hand, many physicians call almost every inflammation of the upper respiratory tract, grip, and the common infections due to streptococci or pneumococci are frequently designated by this name.

As we do not know a pathognomonic sign of grippal infection, sporadic cases, which occur throughout the year, can not be positively diagnosticated without a bacteriological examination of the sputum. The epidemicity, however, becomes a very valuable, but not infallible sign of true influenza. In hospitals and asylums, it is not infrequent to have a spreading

outbreak of respiratory diseases. But they may be caused by the diplococcus lanceolatus as in the cases reported by Luzato (*Yahrt. f. Kinderh.*, 1900). Von Jasch has also shown that the streptococcus produces a contagious pseudo-influenza.

In the Bethesda Foundlings' Home, two or three times annually, a general outbreak of respiratory disease takes place. Some of these are due to the pyogenic bacteria, others, probably, are induced by the pneumococcus. No doubt, many times during the summer sporadic cases of influenza occur, but on account of perfect ventilation the disease does not spread. Epidemic influenza occurs every year during the winter months. It is always introduced from without. Usually one or two nurses are attacked first. But the real danger to the infants comes from one of their number. One of the infants is attacked and within two weeks all the infants in that same ward have the disease—not one escapes. Another nursery may be entirely free from the disease. But sooner or later the disease also makes its appearance there. Dr. Saunders was among the first to point out the extreme contagiousness of influenza in hospitals and asylums.

The recognition of influenza in infants depends on the following characteristics:

1. Contagion.
2. A typical fever curve.
3. A typical appearance of the fauces.
4. Catarrhal symptoms of the upper air passages.
5. The presence of the bacillus of Pfeiffer.

In private practice the first three conditions mentioned usually are sufficient to make a diagnosis; the fourth condition is also usually present. But in all secondary lesions demonstration of the specific bacillus is necessary. The clinical picture is that of an acute fever with a mild angina.

THE CONTAGION.

Too little attention is usually given to the determination of the contagious element. We now recognize that the vast majority of so-called "colds" in infants do not depend on changes of the weather, exposure to drafts, etc., but are infectious diseases. The mother of the infant will usually take

pains to relate how the infant was exposed to a draft, or kicked the cover off, but I do not think that these play any great important part in diseases of the upper air-passages, particularly in influenza. Many times the anxious mother gravely relates all the care she takes to keep the baby from catching cold, and is disappointed that all her efforts are in vain.

In influenza proper the mild exposure to which infants are usually subjected have no significance. But the introduction of the influenza bacillus into the nursery is the important point to discover. An attack of this disease is due to inhaling Pfeiffer's bacillus. As the bacillus rapidly dies when dessicated, it must be taken directly from one having the disease. Thanks to Flügger's experiments, we know that the act of coughing and sneezing throws out a spray of fine mucous particles which contain the germ in large numbers. These are inhaled by the patient.

It is my custom to inquire carefully in the family who else has the infection; most commonly it is the husband or the school children, that is, those who mingle with other people, have the disease first.

In the adult the disease may be so mild as to pass for a common cold, but yet it is the source of the germ that causes the febrile disease in the baby. Common "colds," so-called, are dangerous around babies. The laity should be taught this simple fact.

The anxious mother in her desire to keep a draft from touching the infant, by closing all avenues of ventilation, does the very thing which predisposes to infection.

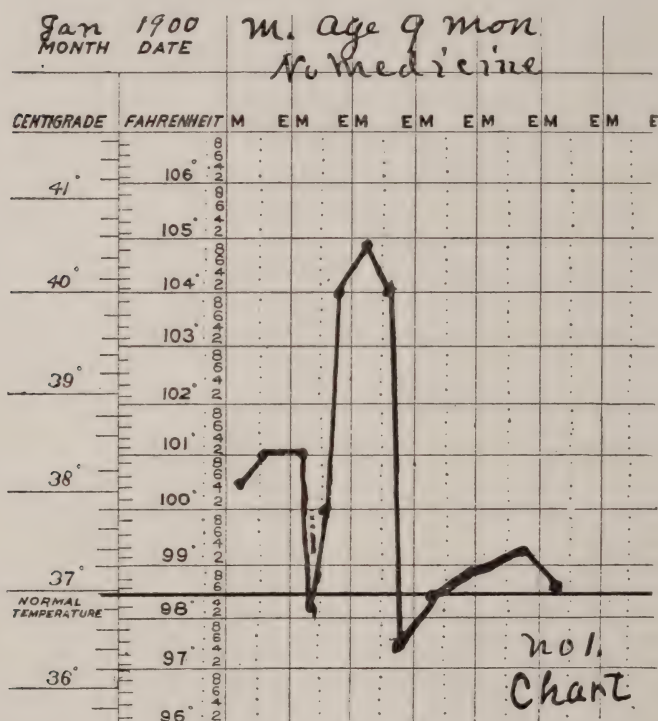
Simple pharyngeal influenza is usually much less contagious, except by kissing and actual contact, than those forms in which coughing is a marked symptom. A coughing child in a non-ventilated room is very dangerous to the other inmates.

The fact that someone else in the household has an acute catarrh becomes a very strong diagnostic corroborative sign.

THE FEVER.

An influenzal infection may be afebrile. Even during epidemics characterized by extreme virulence of the germ,

many individuals present catarrhal symptoms of the air-passages with a certain amount of nervous depression, and yet have no elevation of temperature. This afebrile form is also common in children, but in infants the fever is only exceptionally absent. It is usually the symptom which makes the mother anxious and induces her to send for a physician. Judging from a clinical study, the fever seems to be most severe whenever the fauces, bronchioles or lungs are the site of bac-

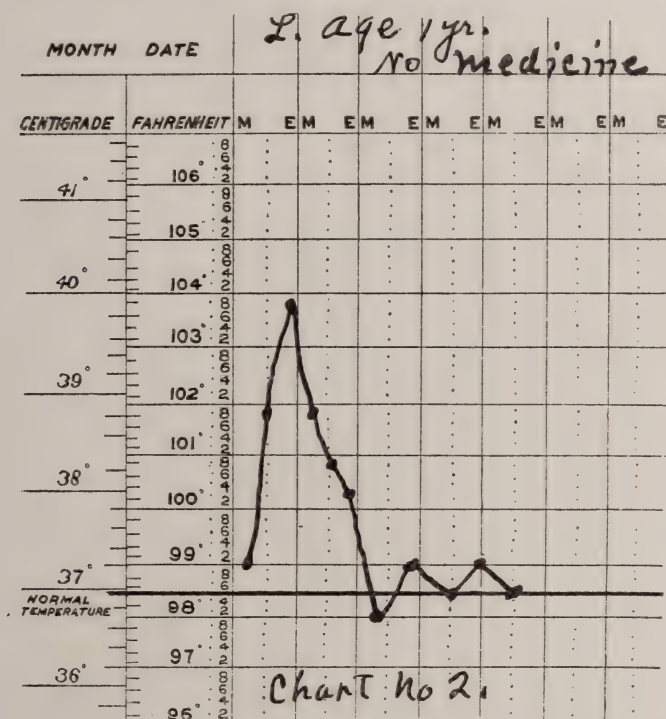


terial growth. Pure infection of the nasal mucous membrane, larynx, or large bronchi is not commonly associated with much febrile movement. This is especially true of the laryngeal involvement. This may be explained by the different character of the epithelial cells lining the larynx, and by the paucity of lymphatic vessels.

The fever in infantile influenza has a sudden onset and rapid elevation. Exceptionally, the fever rises gradually. It

remains at 103 to 105°F. for a short time and then rapidly declines.

The increasing stage is from twelve to thirty-six hours in duration. The fastigium most commonly does not exceed twelve hours in length, but may last for several days. The declining stage varies from a few hours to two days. Charts 1, 2, 3, 4, 5 and 6 illustrate in curves the temperature in nasopharyngeal and faucial influenza. None of these cases received any medicine; a bath was given once or twice when the fever was at its height.

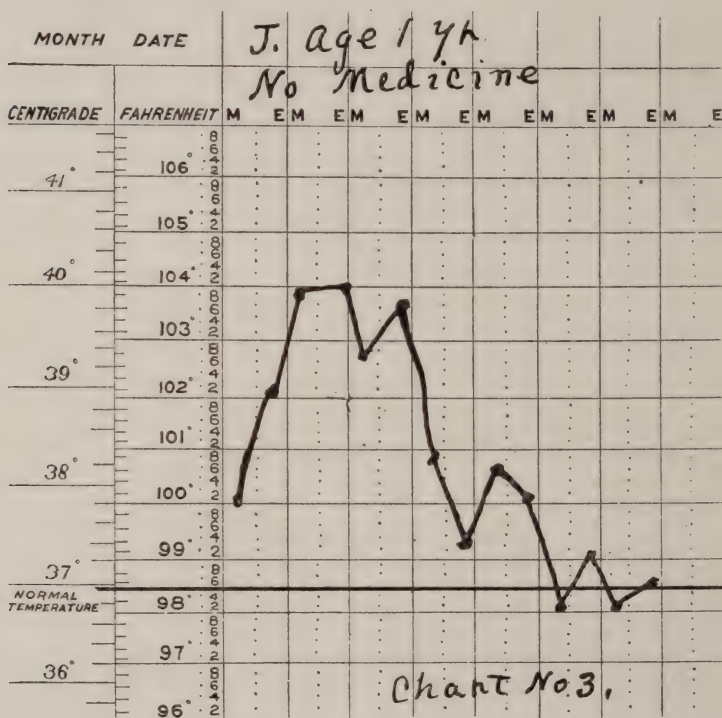


As will be seen, influenza has a somewhat definite fever curve, and thus becomes diagnostic. But the course of the fever has other peculiarities which also are, more or less, characteristic of this disease.

First, an inverse temperature is very common, the fever being highest in the morning. This is illustrated in Chart 6. Again, it is common to find the highest temperature about

midday; so that the conclusion is inevitable that the fever in influenza ascends and descends regardless of the time of the day.

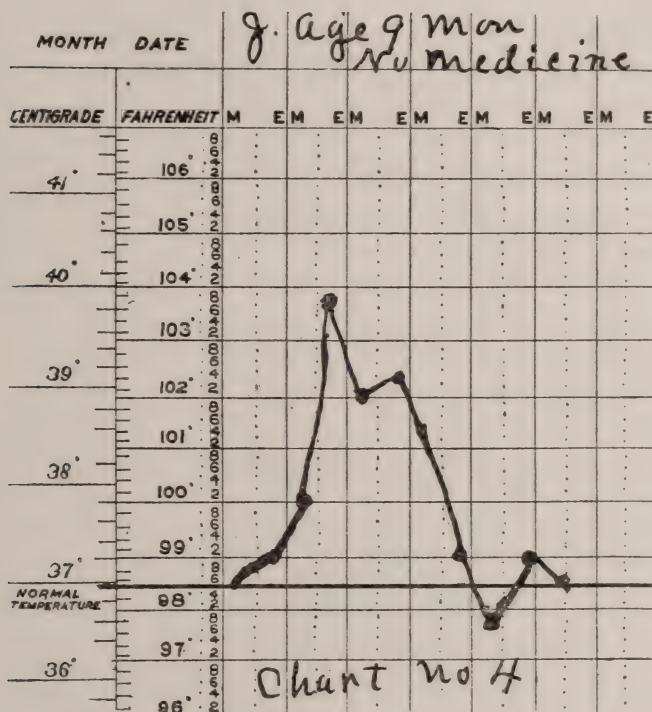
Second, great irregularities occur at the height of the fever during twenty-four hours, so that a curve representing the morning and evening temperature very imperfectly represents the actual fever. Chart 7 illustrates the fever recorded every six hours in an untreated case.



Third, recrudescences and relapses are exceedingly common. By a recrudescence is understood a marked elevation in temperature before the fever has entirely abated. A relapse means a rise in temperature after the fever has apparently subsided. The former condition is probably due to a marginal advance of the original locus of infection; while the latter is caused by a second lesion. Thus the primary lesion may be in the fauces and the second in the bronchioles, middle ear or naso-pharynx. Charts 8 and 9 illustrate the peculiar fever

marked by recrudescences; I know of no fever which has a similar course.

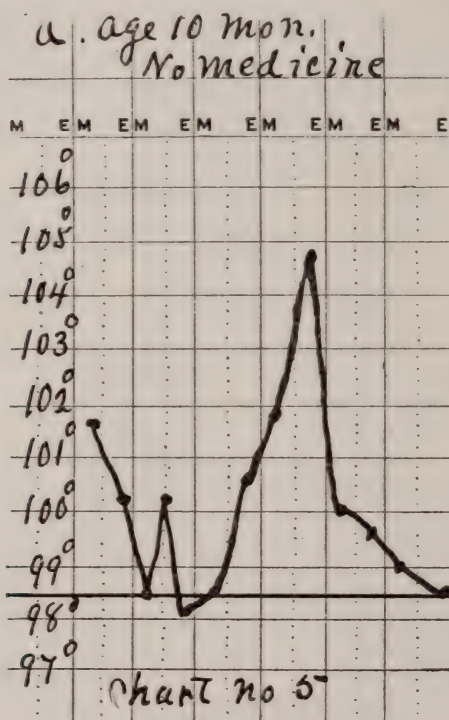
These recrudescences also occur in cases treated by drugs. I am inclined to view them as a part of the natural course of the infection in certain persons, but they also may be caused by improper treatment.



Relapses are common in ill-ventilated rooms; when several persons are congregated an infection and reinfection from one patient to the other may result. Autoinfection is also possible; the patient coughing the bacteria into the air and inhaling them. We can readily appreciate how a faucial grip can subsequently result in a pneumonia. It often happens that two, three or even more relapses or exacerbations of the fever are found in certain patients. The local disease produces a local immunity, but, judging clinically, a general immunity lasting for any length of time is rare.

THE FAUCES.

The primary locus of infection is usually the naso-pharynx or fauces; in either case the inflammation rapidly spreads from one to the other part; still we may see primary laryngeal or bronchial infection; then, of course, the characteristic appearance of the throat may be absent. But in at least 90 per cent of the cases the fauces is involved, and by simple inspection the disease may be recognized. My attention was first called to this sign by Dr. E. W. Saunders, of this city.

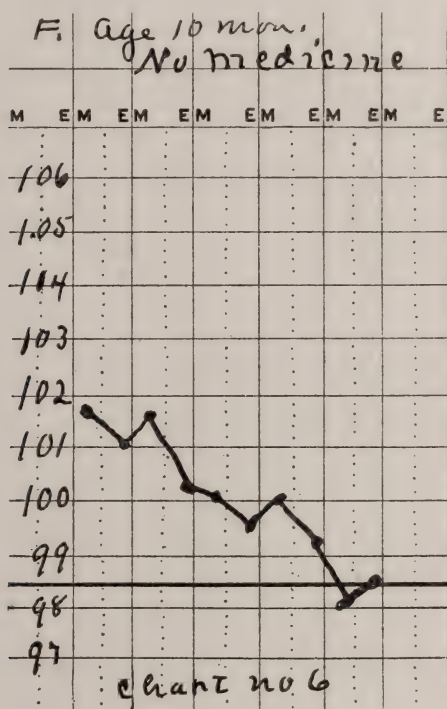


The grip throat has the following characteristics:

The anterior pillars of the fauces and the posterior edge of the soft palate are marked by a congestion, presenting a rose-red succulent appearance; the inflamed margin of the *velum palati* is usually about one-fourth of an inch wide, and has a sharply-defined line of demarkation from the healthy mucous membrane; the inflammation is perfectly symmetrical, and as

a whole presents the appearance of a horseshoe-shaped inflammatory area. In addition, the tonsils and pharynx are very much congested; occasionally a pseudomembrane is seen.

This faucial picture associated with an acute rise in temperature and a history of contagion is usually sufficient to make a diagnosis of influenza.



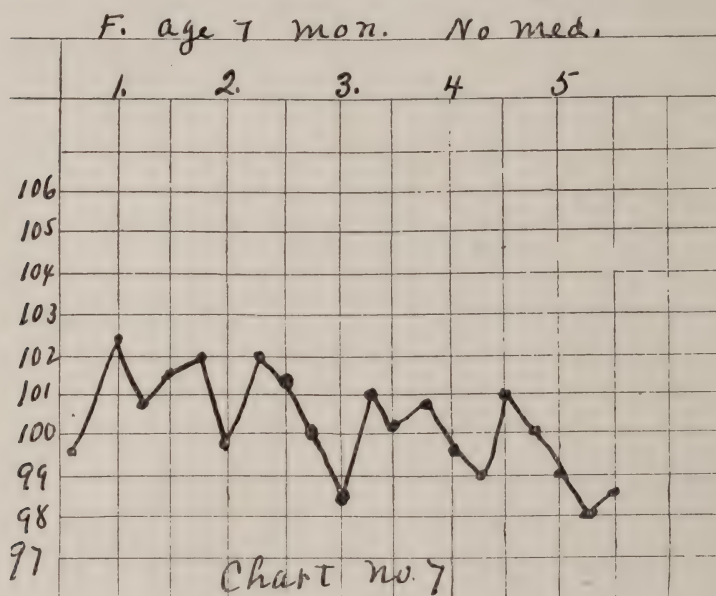
Unfortunately this peculiar redness of the fauces persists for a long time, although it is much paler, and, therefore, in itself gives us no true indication of the actual presence of the contagion.

A similar throat is sometimes seen in pneumococcic angina but usually in these cases the tonsils are implicated.

In adults the so-called angina uratica somewhat resembles grippal angina, but it is more dusky in color and not so sharply outlined.

CATARRHAL SYMPTOMS.

Many cases of influenza present no marked catarrhal symptoms, but I do not place them among the general infections as does Holt and others. The typical angina, or inflammation of the fauces, is almost always present. I have rarely failed to find a local lesion in infants attacked by influenza. When the *locus infectionis* is limited to the tonsils and immediately surrounding structures catarrhal symptoms are most



prominent. But in a large proportion of cases the inflammation may begin in, or spread to, the larynx or bronchi; then the ordinary catarrhal symptoms are noticed. The nasal inflammation gives rise to sneezing, snuffling, mouth breathing and discharge.

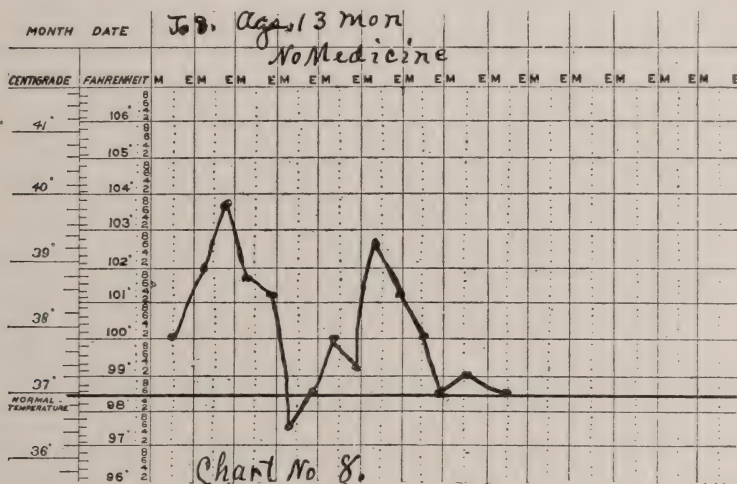
If the infection spreads to the larynx, hoarseness, brassy cough and inspiratory stridor constitute a characteristic syndrome of symptoms. In many infants laryngospasm supervenes and a severe recurrent form of spasmodic croup results. Probably most cases of spasmodic croup that are seen are caused by the influenza bacillus.

The inflammation may extend to the trachea and bronchi,

and a very persistent and aggravating cough is the most prominent sign. Fever is usually slight when the larynx and trachea only are inflamed.

BRONCHIOLITIS.

In newly-born and very feeble infants a grippal infection of the small bronchial tubes is a serious affection. Possibly it is true that in all these cases some parts of the lung are also involved. Cases coming to the autopsy certainly invariably show pulmonary lesions; but clinically there are many cases which, judging from the history and physical signs, are purely inflammation of the bronchioles. The temperature is

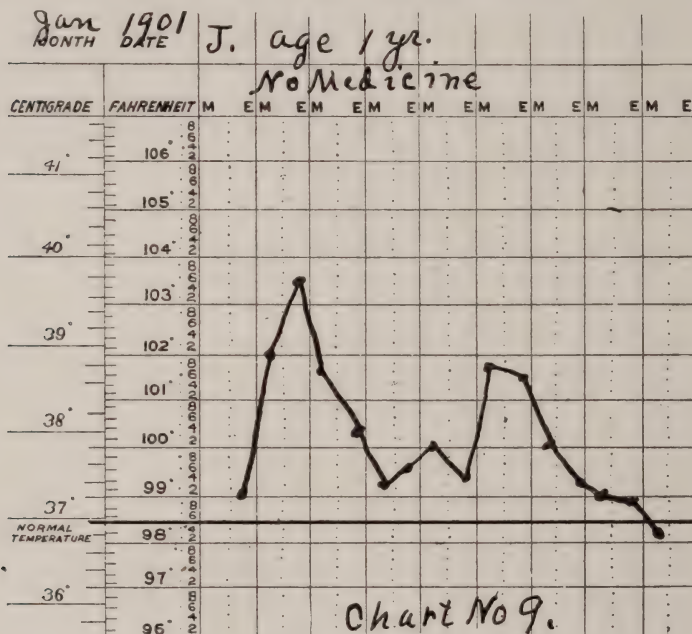


usually not much elevated, but the disease becomes serious on account of the inability of the infant to expel the viscid mucus which accumulates in the small tubes. The principal symptoms are cyanosis and great dyspnea; the respiratory murmur is found to be very feeble or even absent over the whole lungs; at each inspiration the suprasternal fossa and costo-abdominal junction are very much retracted; no laryngeal stridor is present.

Infection of the lung during an influenza epidemic is comparatively uncommon, except in overcrowded rooms. The pneumococcus or the streptococcus are most frequently the invaders, being invited by the tissue made vulnerable by the

grip. To prevent these secondary infections the most careful regulations for the purpose of maintaining atmospheric purity should be prescribed.

The influenza bacillus alone may produce a pneumonia; this may have the form of either a lobar or lobular pneumonia; only the careful study of the flora of the respiratory tract can positively reveal the pathogenic bacteria present.

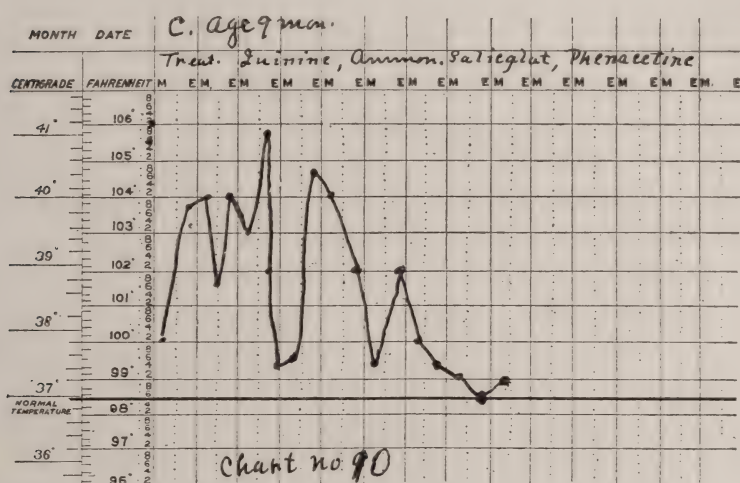


CLINICAL VARIETIES.

The clinical forms of influenza are very numerous. The following are the most common clinical pictures:

1. Acute fever with angina.
2. Acute coryza with or without fever.
3. Acute laryngitis with or without spasmodic croup.
4. Acute bronchitis.
5. Acute bronchiolitis.
6. Broncho pneumonia.
7. Lobar pneumonia.
8. Acute gastritis, and gastric duodenitis.
9. Acute myocarditis.

The gastritis is characterized by violent irritability of the stomach, all foods and drinks being promptly ejected. This hyperemesis spontaneously subsides after one to three days. It is usually associated with faucial or laryngeal grip. Diarrhea and even dysentery frequently occur during an epidemic, but whether these are due to the influenza bacillus or some secondary infection is unknown.



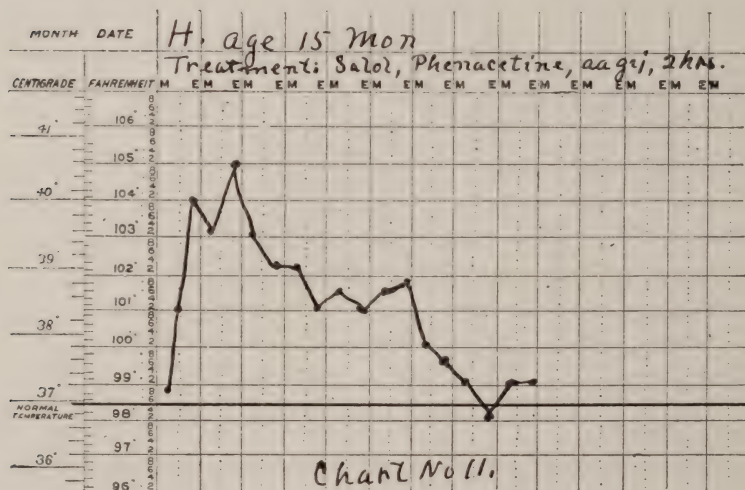
RARER LESIONS OF INFLUENZA.

The internal organs may become invaded by the influenza bacillus. Acute leptomeningitis has been reported; recently such a case occurred at Bethesda, and was reported by Dr. Levy at the Pediatric Society. Dr. Fisch demonstrated an enormous number of influenza bacilli in the fibrinous exudate covering the leptomeninges.

I have seen three cases of endocarditis immediately following faucial influenza in the last three years. Sansom, however, insists that endocarditis does not occur as a sequel of grip; he believes that the murmurs which are found are due to a myocarditis. But the myocarditis in infants has a different clinical picture than that which Sansom gives. The patient's hands and feet become cold and livid, there is a rapid and sighing respiration, the pulse is very feeble, the first sound

of the heart is weak and the heart dulness is increased in breadth; murmurs are not usually heard.

A very interesting clinical sequel of the respiratory grip is a peculiar spasmodic cough which very much resembles pertussis; it is variously known as pseudo-pertussis and pertussoid. Almost every year during an influenza epidemic one or more infants have been isolated, in Bethesda, as suspected cases of whooping-cough, but on further observation it was found that the cough disappeared in about ten days. I have seen many such cases also in dispensary and private practice. I can not agree with Dr. Forchheimer, however, when he



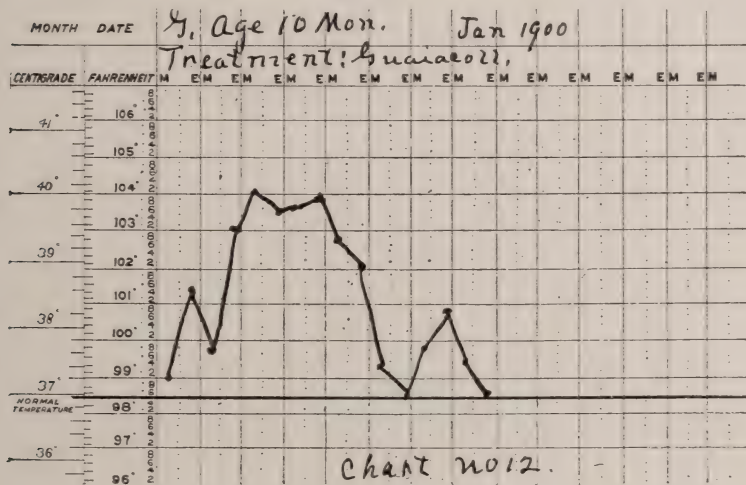
maintains that these cases are very contagious and produce similar symptoms in others. Pertussoid must be regarded rather as an accident of grippal infection, and has no particular liability to produce identical symptoms in others, outside of the catarrh.

The differential diagnosis is based on the history of the history of the case, and the less severity of the paroxysmal cough. But pertussis and influenza may occur in the same infant. At present at Bethesda in one ward we have such a combination. Almost all infants have had pertussis for several weeks, and in the last two weeks have been attacked by influ-

enza. The former disease does not seem to effect the course of the latter.

Two cases of jaundice following grippal gastroduodenitis have lately come under my observation. The first was in an infant of three months, in whom the symptoms of catarrhal jaundice lasted about one week. The second patient was 18 months old, and very severe iterus persisted for five weeks.

Hemorrhagic glomerular nephritis occurs rarely. Freeman reported such a case at the last meeting of the American Pediatric Society. About one year ago a fatal case occurred in Bethesda.



Suppurative pleurisy, and osteoperiostitis with demonstration of the influenza bacillus has been reported by Mennier.

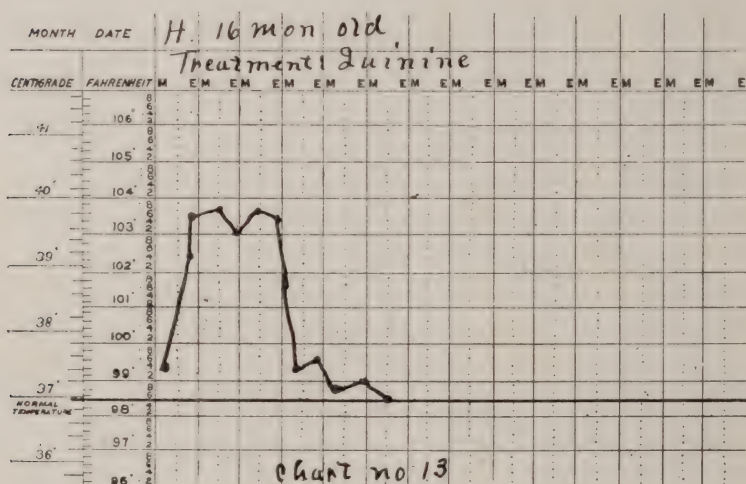
Among the most frequent complications acute serous and suppurative otitis media must not be forgotten.

Functional nervous sequelæ are not so common as in adults. During the course of the disease somnolence, hyperesthesia and sometimes convulsions, are the most prominent nervous symptoms.

While the vast majority of cases occurring in infants are trivial, on account of its frequent and universal occurrence, influenza ranks next to gastroenteric infection as the most potent cause in the mortality of infants.

TREATMENT.

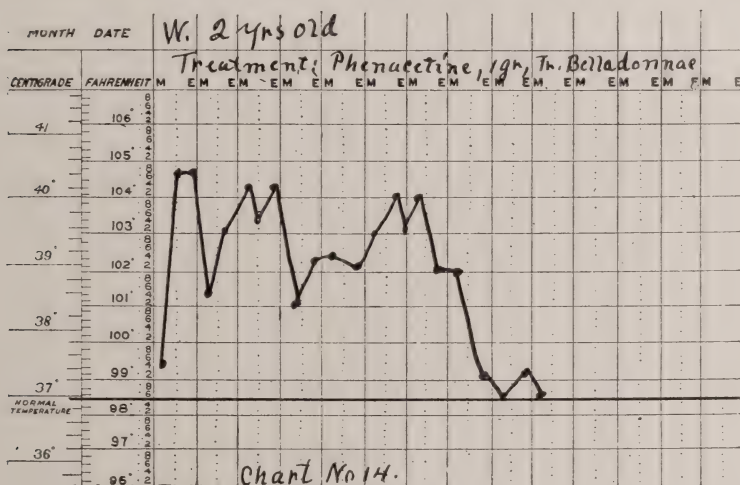
Effective prophylactic measures are almost impossible during the prevalence of an epidemic, but in the case of all feeble infants a most careful and vigorous attempt should be made to prevent infection. The infant should be isolated in a clean, warm, well-ventilated room; the nurse in charge should be watched and as soon as she shows any symptoms of influenza, should be replaced by one free from the disease. Breast-fed infants, fortunately, are much more able to resist the disease and, consequently, entire separation from the mother is not needful.



But all infants during the prevalence of influenza should be more or less isolated from others having the disease; no one but the mother or nurse should be permitted to sleep in the same room; visitors should be excluded from the nursery, and the baby should come in contact with as few people as possible. Every day, if the weather is at all favorable, it should spend several hours in the open air. If the nursing mother, nurse or the infant takes the disease, pains must be taken that the air does not become charged with the bacilli. There can be but little doubt that the severity of an attack depends in a great measure upon the number of foci primarily infected. This, again, depends on the number of bacilli in-

haled; the room should, therefore, be warm, but ventilation most perfect; no dust must be in the room. A clean, uncarpeted room, with no lace curtains, should be selected. A hot fire, but with one or more windows open, is the ideal. The colder the outside air the more imperfect is our ventilation, usually, and the more malignant is the influenza.

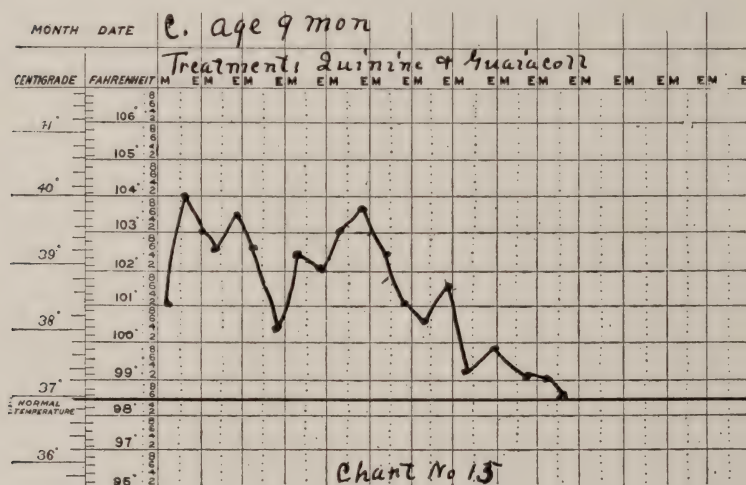
The treatment is based on the recognition of the natural course of the disease; we have no drug that effects the course in the least; much harm is done by trying to do too much with drugs. In the Bethesda Foundling Home we have for several years used a great variety of methods in treatment, none of which were found particularly effective. In order to determine the exact value of various drugs, many infants were given no medicine; this gave us the normal course of influenza, and is illustrated by the temperature curves given above.



It was found that many infants when treated really had a more protracted fever. Charts 10, 11, 12, 13, 14 and 15 illustrate the fever in curves, with various methods of treatment. The conclusion is that few drugs really do much good and most of them do harm. The coal-tar antipyretics seem to do harm, not so much by depressing the heart, but by a retardation in the formation of antagonistic principles and inhibition of phagocytosis. The only drug which has appeared to have some definite value is quinine in full doses.

We should, therefore, regard influenza just like measles, as a self-limited disease that requires no medication, unless some special symptom indicates it.

When the fever rises over 103°F . a tepid or cool bath should be given; this bath should be so timed that it may bring the temperature down at least one degree. If the temperature rises again, it should be repeated. Instead of the bath, one or two doses of phenacetine or antipyrine can be given; but these drugs should be prescribed to keep the fever within reasonable limits and should be discontinued as soon as this purpose is served. Ordinarily, a mixture containing phenacetine and ammonium salicylate act very well; to this digitalis may be added advantageously.



It matters not whether the infection is located in the nose, larynx, fauces, bronchi or stomach, we should expect a local amelioration after two or three days, but in the bronchi and larynx the irritation may persist for a long time.

In laryngitis antipyrine and the bromides should be administered to prevent laryngospasm. In bronchitis and pertussis inhalations of creosote or lysol are very beneficial, in addition to the ordinary remedies.

In bronchiolitis the most careful supervision of the respiration is necessary. The infant must be frequently aroused and

made to cry and cough; for this purpose pinching and almost cruel flagellation must be resorted to; sneezing should also be induced. Inhalations of steam containing creosote are beneficial. Cardiac and respiratory stimulants, namely—digitalis, nitroglycerine, strychnine, camphor, caffeine and ammonia must be employed. Forced feeding is usually required—our whole aim is to keep the infant alive until the local inflammation subsides.

For gastric grip, starvation for twenty-four hours, and, in extreme cases, for two or three days, is all that is necessary. During the first few hours all medicine and water are rejected by the stomach. Rarely rectal alimentation must be used. In the diarrheal form repeated doses of castor oil is the best treatment.

In short, the treatment of influenza in infants may be summarized as follows:

1. Rest and fresh air.
2. Careful attention to diet.
3. Prevention of secondary infection.
4. Supervision and control of bodily functions.

[1460 South Grand Avenue.]

The Theory and Therapy of Typhoid Fever: With Special Reference to the Modern Antiseptic Treatment.

BY CHARLES FRANKLIN HOPE, M.D.,

COATESVILLE, IND.

TYPHOID or enteric fever was first recognized as a distinct disease during the second and third decades of the nineteenth century. It received its present name—typhoid, meaning typhus-like, from the French physician, Louis, about the year 1830. Since that time various theoretical speculations have been promulgated and taught by medical writers as to the etiology, pathology and treatment of this common and disastrous disease. The development of the

new science of bacteriology has brought forth an entirely new theory of typhoid fever, and so general and universal has been its acceptance that all previously-existing dogmas have been relegated to their proper places among the innumerable specimens of human error.

Progress in determining the actual causes of infectious diseases was painfully slow before the time of the rapid advances of recent years. This new epoch marks the beginning of an era without a parallel in the history of medicine, the great light of which is now unfolding, the practical advantages of which are beginning to appear in the intelligent means and methods used in the prevention as well as in the treatment of disease.

The only tenable theory at the present time with reference to the etiology of typhoid fever is, that the essential exciting cause is due to the implantation of a particular pathogenic germ—Eberth's bacillus, which micro-organism was discovered in 1880. The typhoid bacilli are always abundantly present in the intestinal discharges of affected persons.

The predisposing causes are various, and embrace all those conditions which favor the development and accumulation of the infecting principles. They also include any increase of the natural or acquired susceptibility of the individual, such as climate, the season of the year, the weather, age and the personal habits or modes of life.

It is known that a very common source or habitat of the typhoid germs is to be found in water, used for domestic purposes, whose sources of supply have suffered from sewage pollution or contamination with the excreta of typhoid fever patients. The disease may be acquired from milk, oysters and other articles of food which have been infected and which are capable of supporting for a time the living germs. It may be acquired by and disseminated from the persons and clothing of attendants who have been careless and indiscrete in their manner of dealing with the excretions of typhoid patients. The disease may be contracted by breathing the bacilli typhosus in germ-laden dust, but there is no reason to suppose that any exhalations from the patient contain the bacillus. There is a theory, and one which *a priori* seems plausible, that flies

carry the organisms upon or within their bodies, or both, and in their migration, deposit them upon the general food supplies or vessels wherein food is prepared. Some cases of typhoid fever can not be explained readily on any other hypothesis.

Pathology and Symptoms.—It is not necessary to enter into a detailed discussion of the pathological anatomy and symptomatology of typhoid fever any further than is absolutely requisite to explain the rationale of the treatment. The specific or primary lesions of typhoid fever consist of the hyperemia of the mucous membrane of the small intestine, together with the infiltration and sloughing of the solitary and agminated glands, with their subsequent ulceration. Thus, during the second and third weeks, there are generally present irregular oval ulcers with swollen and undermined edges, whose bases rest on the submucous, muscular or peritoneal coats of the bowel. These, and some changes of minor importance which take place in the mesenteric glands, spleen, liver and other organs, are as characteristic of typical cases of typhoid fever as are the eruptions in the exanthematous diseases. Death may take place from these lesions. The necrobiotic process in Peyer's patches may open blood-vessels sufficiently large to cause death from hemorrhage, or perforation may result, followed by fatal peritonitis. It requires no stretch of the imagination to see that the ideal treatment of typhoid fever can never be attained until some specific germicide has been discovered—some means whereby this necrosis of the Peyerian glands may be aborted, and thereby prevent the development of the toxemia and sepsis.

Only a brief outline of the characteristic symptomatic phenomena of this disease will be given. It occurs in all countries and climates, having no geographical boundaries. Adults are more liable to the disease than young children, although the latter are not exempt. In the main, it is well known that typhus abdominalis is a disease of adolescence, or young adult life. It is, in fact, quite largely restricted to the ages of from 15 to 30 years. Its occurrence is relatively rare after the age of 60 years.

Its invasion is insidious and its development gradual. Previous to the appearance of the prodromal symptoms, if we

inquire as to the condition of our typhoid fever patients, we will often learn that they have been given to dreams and nightmare, and have been heard to moan in their sleep for one or two weeks. This is indicative of a mild autointoxication.

Languor, ennui, headache, stupor, increased temperature and accelerated pulse are usually present. In the early stage an alternation of temperature may occur with some regularity each day. The tongue may be coated at first, and with the further progress of the disease, may become dry and glazed, frequently with a brown stripe in the middle and reddened margins. In the further advancement, these existing symptoms may become intensified, and many others may be added. The spleen almost invariably becomes perceptibly enlarged, the abdomen becomes distended and tympanitic, and small rose-colored spots appear on the surface, especially over the abdomen and thorax. There is often a moderate amount of epistaxis or nose-bleed. A certain degree of deafness is apt to occur, and an irritating bronchial cough is present. Dark sordes form on the teeth, and a low delirium may supervene. Diarrhea may or may not take place—it is present in about one-half of the cases, and hemorrhages from the bowels are not infrequent.

Treatment.—Typhoid or enteric fever is a preventable disease. The ultimate objects of prophylaxis should be first, to prevent exposure to all of those manifold causes and influences which tend to increase the susceptibility of individuals, and, second, to prevent the accumulation and dissemination of the infecting principles, that is, the typhoid bacilli. To accomplish these ends successfully will require the co-operation of the physician, the public and the sanitary authorities. The preventive measures of chief importance should be directed toward securing absolute and uncompromising cleanliness of the patient and surroundings, and the careful disinfection and disposal of all excretions.

Judging from the radical differences of opinion which have prevailed in the past, it seems probable that the entire medical profession will never agree upon the best method of treating typhoid fever. Long before unanimity of opinion will prevail, typhoid fever will have, by wise prophylactic and san-

itary measures, ceased to be a common disease. Even now, since its causation and mode of propagation are so well understood, its continued prevalence is a reflection, if not a reproach, upon the civilization of the age in which we live. But until this ideal result is achieved, we must study the resources at hand and select the method for daily use which promises the best results. No subterfuge or artifice short of this will satisfy the requirements of our Esculapian missions. This is a subject of infinite magnitude, and the studious and euridite physician—the one who strives to attain something higher than mediocrity—the one who labors for science and humanity—must often feel that yet better methods, which will produce better results, may exist.

The majority of physicians are content with the expectant or the semi-expectant treatment of typhoid fever, and differ from each other only in detail. The result seems satisfactory, judging from the *number* of the defenders of the expectant treatment, and yet under that treatment it can not be gainsaid that typhoid fever is a tedious and protracted disease, running a course of four to eight weeks, or sometimes longer, and often terminating fatally. With this routine treatment from five to twenty-five per cent of the cases result in death, while a mortality not exceeding two per cent is easily attainable by adopting a method more in harmony with recent scientific advances in pathology and therapeutics. We have certainly reached a point in the study of this subject, so wrought and interwoven with the deepest interest, when it is our solemn duty to pause, weigh the reason of this enormous mortality under the ordinary treatment, and ascertain if it may not be materially reduced.

No one will deny that there has been some diminution in the average mortality from typhoid fever within the last twenty-five years, but most adherents of the expectant plan rely to a very great extent upon the nursing and by them this slight decrease is attributable largely to more competent nursing. My contention is that the results have merely kept pace with the progress and advancement of knowledge in the collateral sciences and with the few improvements which have occurred in the general and special treatment. But applied therapeutics

—the art of medicine—has not made such rapid strides as the sciences of pathology, etiology and bacteriology.

A more satisfactory, efficient and successful way of treating typhoid fever than is embraced in the term "expectant method" undoubtedly does exist. The adherents and advocates of the Brand hydrotherapeutic system and of the new antiseptic method can not all be mistaken. They have investigated and analyzed the subject in all of its details and have weighed the evidence, pro and con, with judicial fairness. Results have been achieved by these methods which have not been and can not be attained by expectant treatment or any other known method. This is not a wild and fanciful chimera but a substantial fact which has been conclusively established by statistical investigation.

We are told by the older and more conservative members of the profession to treat the patient, not the disease. It is perfectly proper not to lose sight of the patient in any disease, and the physician who treats merely the name of a disease is imbued with empiricism, but in typhoid fever we have conditions—real entities, gross lesions and morbid anatomical changes, against which properly-directed remedial agents will produce positive and decisive results in the restoration of health. But why not treat the disease, especially when the chances of effecting a recovery are so greatly augmented? By so doing it may save the attending physician the necessity of holding an autopsy, without which, however, some ultra-scientific professor is said to have remarked *no case history is complete*. As a matter of fact, *is* typhoid fever such a vague and mysterious disease that efforts to destroy it at its source and origin are vain and futile?

Every intelligent physician will admit that typhoid may produce a toxemia or septicemia, in fact, it generally does in a direct ratio to the deviation from the use of intestinal antiseptics. It may, and does, manifest general and constitutional symptoms. We will also acknowledge that, in a sense, *it is a general disease*, but after all, when rightly considered, it is but little more than a local disease. Pathology teaches that the main foci or lesions are in the lower part of the ileum. Tonsillitis, dysentery and gastritis are local diseases. Either of

these diseases may and do produce general symptoms. Typhoid fever is in reality an enteritis due to a specific cause. Again I ask, what is there so wonderfully abstract and abstruse about typhoid fever that it should not be considered, for practical and therapeutic purposes, a local disease? It is answered, by those who hold a different idea, because there are changes in the mesenteric glands, the spleen and the liver. These changes are as certainly secondary as an adjacent enlarged lymphatic gland is secondary to a boil. If the furuncle is opened in time the swollen gland rapidly subsides. How many typhoid fever patients die of changes in the spleen, the liver and the mesenteric glands? Typhoid patients die of perforation, of peritonitis, of hemorrhage, of exhaustion, of shock, of sepsis; but the focus of chief importance in this disease resides always in the small intestine.

The Brand treatment, while productive of far better results than some antiquated methods in use even to this day, while infinitely better than unarmed expectancy, is an orthodox but not a rational treatment of typhoid fever. At one time in my professional career, I was a staunch and ardent advocate of hydrotherapy. My change of opinion is due to the result of mature deliberation and sifting of the evidence offered by clinical and experimental data obtained from various sources. I am well aware that my opposition to the cold-bath process is in direct contradiction to the opinions of many leading students of the healing art, but all preconceived opinions and prejudices should be laid aside in scientific investigations. We should seek the truth and the truth only, and when we once strike its trail it should be scrupulously and honestly followed, even if it plunges us over the falls of a Niagara.

One of the noblest and most learned physicians that I ever knew was an ardent advocate of the Brand method. He was one of its earliest defenders in America—I refer to the late lamented Dr. Gonsalvo Cordova Smythe, of Greencastle, Indiana. It seems that the irony of fate decreed that this noble and illustrious doctor should die from typhoid fever—a disease in which he had spent a lifetime in studying.

In a notable paper of great and widespread influence, but which encountered some adverse criticism, he said: "No one

has any right to oppose the hydro-therapeutic treatment upon purely theoretical grounds. He who does so, and refuses to adopt it, signs the death warrant of twenty individuals out of every hundred with this disease which he treats, and a discriminating public will hold him responsible."

With all due respect to the memory of my distinguished friend, I believe that he was honestly mistaken. Subsequent investigations have shown that the antiseptic treatment is much superior in results to any other, and the evidence will continue to grow until it will be overwhelming. One well-established fact is worth a thousand theories, however plausible they may appear.

Hydrotherapy aims merely to support and sustain the patient until the intestinal ulcers heal. It is simply an additional resource in the expectant treatment, a new weapon to tone up the nervous system. A person suffering from an abscess, for instance, may possibly recover in time under the use of cold baths or the expectant treatment. The same is true of typhoid fever. But the rational treatment for typhoid fever must be directed to the local focus of sepsis—the intestinal lesions or ulcers. The time has come when the chief objects in our treatment in this disease should be:

1. To limit the extension of the ulceration.
2. To treat the ulcers locally, and in this way prevent the development of secondary manifestations.
3. To obviate or prevent their giving rise to hemorrhage or perforation.

In this day of mechanical therapy it seems strange to expect much from drugs, and yet I have no hesitancy in saying that the best treatment of typhoid fever is treatment *with* drugs. I presuppose, of course, that the diet and nursing are based on reason and common-sense. The evidence in the last few years has grown astonishingly large and convincing that certain drugs do influence the course and duration of typhoid fever. Why should they not? It is plausible and natural that they would, and still a large proportion of the profession refuse to be convinced. They refuse to adopt the better mode, clinging with obstinate pertinacity to their routine and favorite plans, and as a consequence the great fatality and prolonged continuance of the disease are not ameliorated.

One of the old heresies of medicine is that "typhoid fever must run its course." This clause is so frequently and so fervently believed that there is room for wonder at the use or function of the physician at all. *Cui bono?* Those who advocate the use of intestinal antiseptics do not believe that typhoid fever must run its course. This plan of treatment is not an idle tale—not a vagary or dream of the enthusiast—to be blown aside by a breath of wind. It has been so successful in the hands of those who have adopted it that they will continue its use at least until something better is offered. It has come to stay.

Every physician knows that the intestines can be affected by calomel, salol, thymol, sulpho-carbolate of zinc and sodium, bismuth, turpentine, beta naphthol and a large number of other drugs. But that these drugs should be able to affect intestines which are the seat of typhoid ulceration seems strangely incredible to those physicians who are wedded to the older doctrines of therapeutics. Every physician knows, or should know, that acute enterocolitis in infants and children can be benefitted if not entirely cured by small broken doses of calomel, especially in connection with some of the other reliable intestinal antiseptics, and that the same drugs are equally valuable in the enteritis of adults; but that these drugs should be employed in typhoid fever to influence the condition of the intestines and the intestinal contents is a view to be met by the haughtiest skepticism! For my part, so long as I am engaged in the practice of medicine, I propose to be steadfast and loyal in the advocacy and use of this modern treatment. I shall do what little I can to popularize the antiseptic treatment of typhoid fever.

Liebermeister's method of influencing the beginning of typhoid fever by giving large doses of calomel has been accepted by many as of positive value. Some physicians even maintain that the mild chloride of mercury is one of the best intestinal antiseptics. My individual preference is for small doses of calomel and zinc sulphocarbolate, but similar effects are obtained from other remedies belonging to this class.

Starting from the positive observations that the intestinal antiseptics will cure enteritis in children and adults, it will be

found that they also possess remarkable value in combating typhoid fever. Under their use the intestines can be practically sterilized and the contents rendered harmless for the organism. After the continuous employment of these antiseptics for several days absorption of poisonous substances from the bowels is greatly modified and in many instances wholly stopped. In this manner ptomain-intoxication is forestalled. The effect is shown by the disappearance of the symptoms of toxemia, and the stools lose their offensive character, and the formation of gases in the bowels ceases.

No patient has been treated exactly right who has or continues to have tympanitic bowels. In my opinion, it is the worst symptom, aside from catastrophes like hemorrhage or perforation, that a patient can possibly have, even if the tympanites is only moderate. Nearly every patient who dies has tympanites more or less severe during the course of the disease. Why is it a grave and dangerous symptom? Because it greatly lowers the powers of life—lessens the vital resistance. The pulse gets weak and quick; the patient becomes restless, unable to sleep, delirious, and a train of unfavorable ataxic symptoms supervene. The causes that are productive in bringing about this condition are continued typhoid stools, intoxication from the absorption of the toxins and ptomains, thus lessening the powers of the entire cerebro-spinal system, and especially the sympathetic system. Gas is generated in the bowels, and distension from want of muscular force from the innervation ensues. Finally, the intestines get beyond the contractile power of the muscular coat of the bowels, and the result is peritonitis and death.

This condition is positively both preventable and curable. The pure or modified expectant treatment will not modify nor relieve the meteorism, and neither is the systematic cold bathing process entirely trustworthy. The eliminative and antiseptic treatment of typhoid fever, on the contrary, will give unparalleled success before or after this condition has arisen. The testimony on this point is clear, trustworthy and incontrovertible. Any failure to be governed in accordance with these thoroughly-established and demonstrable clinical facts is, it seems to me, little less than criminal.

Of three things I am certain: That the modern antiseptic treatment of typhoid fever will greatly mitigate the symptoms, will shorten its duration, and reduce the danger of death to an infinitesimal minimum.

Whoever will may doubt and decry the antiseptic medical treatment of typhoid fever as much as he pleases. He may, if he chooses, continue to sign twenty death certificates out of every hundred cases that confide their lives and fortunes to his safekeeping, and by dignified inaction and mismanagement, he may prolong for weeks and weeks the illness of the other eighty who so narrowly escape the summons to cross the threshold of death, but for my part, I prefer to pursue a different course. I am sure of the virile potency of the antiseptic treatment of typhoid fever, and look upon it as an established fact in medical science, and when called to a case, undertake the treatment without any apprehension or forebodings as to the result. Whenever we can arrive at this state of mind upon a scientific and therapeutic basis in a disease like typhoid fever, which carries off annually its thousands of the youngest and fairest, with the highest hopes and the brightest prospects, then we have accomplished something of value for ourselves and for humanity. We have triumphed over the *laissez faire* policy of professional negligence and dilettanteism, of which the sins of omission are quite as reprehensible as those of commission.

Whenever the temperature goes above 103°F. , antipyretic measures are indicated. Sponging with cool water, or with alcohol and tepid water, is generally sufficient. If the hyperpyrexia persists, small doses of some safe antifebrile will leave nothing to be desired.

Enteroclysis, irrigation or rectal injections of normal salt solution as an eliminative measure in typhoid fever is of such inestimable value that it should form a prominent part of the management of nearly every case. In the event of profound shock or collapse from any cause, in addition to the hot enemata, hypodermoclysis, which consists in the introduction of the normal saline solution, at a temperature a little above that of the body, into the subcutaneous connective tissue, by means of a large aspirating or other suitable syringe, will be found

to be a wonderfully restorative expedient. When acute hemorrhage and allied conditions are present, entero- and hypodermoclysis will often produce startling results.

In every case of typhoid fever it is important to specialize and judge by the needs and exigencies of the individual. When the antiseptic treatment is employed, all other indisputable safeguards should be utilized and not neglected in any event, and the more favorable the diet, nursing, and the patient's hygienic surroundings, the better will be the final result. This mode of treatment, to be sure, does not relieve the physician of skill, knowledge, prudence, watchfulness and good judgment. It does, however, in a large majority of cases dissipate quickly the more severe symptoms, and it modifies the profound toxemia, and hastens the course of the disease in a surprising manner.

From my observations I have reached the conclusion that by the early and judicious application of the best drugs in the class of intestinal antiseptics, the mortality in all uncomplicated cases can be rendered absolutely *nil*, and that many complicated cases will recover. It should be remembered that above all other considerations, the antiseptic treatment will keep in abeyance and control the graver features. This is the secret of its success, but as before suggested, in view of the dire emergencies which have arisen when the purely expectant, hydrotherapeutic, as well as with other methods that have been in vogue, it is well to remember that upon our conscientious, unbiased and fearless judgment and action rests the weal or woe of those who commit their lives into our sacred keeping.

It is true of enteric fever, as it is with most other diseases, that the greater success in management depends largely on a knowledge of when, where and how to act. The knowledge of conditions, means and method now available should guarantee results not reasonably expected or possible in former times.

It has been said that the three pests of a community are: A clergyman without charity, a lawyer without a sense of justice, and a doctor without knowledge. I will, therefore, close by quoting from a distinguished writer, who says: "The best treatment for typhoid fever is a good physician."

Upon Certain Fractures.*

BY NORVELLE WALLACE SHARPE, M.D.,

ST. LOUIS, MO.,

THE first case, to which I invite your attention, is an ununited fracture of the tibia. The patient has an alcoholic and nephritic history. He entered the hospital March 1, 1900, with a fracture of the tibia and fibula. On October 22d the fracture still existed, and a note, in the history, of the same date, states that under lumbar medullary narcosis (cocaine), the fracture ends were approximated, and united with silver wire. Union has not yet occurred. He denies any syphilitic infection, and both the personal and family history are apparently clear, with the exceptions above noted. Our knowledge, up to date, as to the causation of ununited fractures is vague. The very fact that such terms as, delayed union, fibrous union, failure of union, and pseudarthrosis, are current, is evidence that our knowledge has not yet become accurately crystallized. In many cases, however, of so-called delayed or faulty union, there is an actual union of the fragments. This occurs by an end-to-end agglutination, or by a lateral union, notwithstanding distinct motion is present. On the other hand, there is frequently entire absence of union and a pseudarthrosis is manifest, with a flail-like limb. Regarding the causation of this condition we know that syphilis, cancer, prolonged suppurative conditions either remote or local, severe malarial infections, and a deteriorated condition of the general health; or, in brief, anything which interferes with general nutrition, or produces a depressed functionation of the vital forces, will tend to this result. Usually, however, the difficulty is local, and due to a faulty position of the fragments, defective trophic supply, or to the interposition of muscle shreds or bands between the ends of the bone. It is interesting to note in this connection that at times so moderate is the irritation caused by

*Based upon some remarks before the Medical Society of City Hospital Alumni at a Clinical Meeting, December 6, 1900.

the fracture, so simple and clean cut the conditions following the trauma, that relatively no reaction follows, with a practical absence of all callus and a resultant nonunion, or delayed union. (Fig. 1). Frequently these so-called "failures" are not in



FIG. 1.—Skiagram of an exuberant callus following fracture of the thigh; the reverse of the condition often present in many case of so-called ununited fracture.*

reality failures, but are merely a delayed union; in many cases after a period of weeks, or perhaps months, satisfactorily good union will obtain. An effort should be made to increase the general tone of the patient; liberal feeding should be permitted,

*These skiagrams, excellently executed by Dr. W. W. Graves, of St. Louis, have been kindly loaned for use in illustrating these remarks, by Dr. H. L. Neitert, Superintendent of the St. Louis City Hospital.

with good wines, and tonics whose general tendency is toward the increase of the bone-making constituents, such as phosphorus and the phosphates of lime. Our local measures are massage, bandages to increase the venous congestion around the bone ends, the injection of stimulating substances, such as iodine, and chlorid of zinc, resection of the ends of the bone, re-fracture, and suturing of the fragments together by means of the periosteal flaps. It is a matter of real regret that a suture which presents such manifold advantages as silver wire should not meet the indication. It undoubtedly, when used as a permanent buried suture, intensifies the rarification which is normal in bone repair, to such an extent that in the majority of cases results are not satisfactory. In all probability this patient is an example of this fact. In cases in which there exists an oblique fracture with sliding of the fragments past each other, or in cases where an interposition of fibrous tissue, muscle bands, or periosteal flaps occur, measures directed toward the removal of these hinderances to union should be instituted. To recapitulate:—our treatment consists of stimulation of the vital processes, local stimulation, the removal of any bar to primary union, and the suturing of the periosteal flaps together, by means of absorbable suture material, when the latter procedure is indicated.

The next case presents a transverse fracture of the patella. Fractures of the patella comprise from 1 to 2 per cent of all fractures. They occur more frequently in men than in women, and are more generally observed in middle life than in either youth or old age. They are presumed to have been caused by a blow, or a fall upon the patella, or by a sudden contraction of the quadriceps femoris, or by a sudden flexion of the knee opposed by a tense quadriceps. The usual cause is undoubtedly due to contraction of the quadriceps, or contraction of the quadriceps plus sudden flexion. (Fig. 2).

The ordinary supposition that falls and direct violence are frequent causative agents is negatived by the fact that the every-day fracture observed clinically, is not comminuted; while in experimental work fractures produced by direct violence are almost invariably comminuted. Anatomically, it

may be noted, that in the usual fall the patella does not bear the brunt. The most frequent lines of fracture are those which are either transverse or moderately oblique, or a combination of the two. Usually simple, occasionally compound, frequently involving the joint structures. Separation of the frag-



FIG. 2.—Skiagram of a transverse fracture of the Patella.

ments is ordinarily marked, due primarily to retraction of the quadriceps femoris, tension of the fascia lata, and articular distension; secondarily, to retraction of the muscles; and, finally, to retraction of the ligamentum patellæ. Structures involved are the fibro-periosteal layers in front of the bone, the lateral expansions and the capsule on the sides, the fascial expansions downward, and the bone itself. The most prominent

symptom is impairment of the use of the limb. Difficulties in securing a perfect result are due to the pull of the quadriceps, articular distention, intervention of the fibro-periosteal fringe or aponeurotic shreds; to adhesions and retractions, to tilting of the fragments, and to hypertrophy of the finally united bone.

Treatment is both operative and non-operative. Under ordinary circumstances and in the hands of the everyday practitioner, non-operative treatment is advised. The reason for this being that the vast majority of practitioners of medicine are not created with, and subsequently have not acquired, what may be termed the habit of surgical cleanliness. But in the hands of men trained in the field of cleanly (*i. e.*, surgical) habit, with assistants also educated along these lines, with clean hands, and surrounded by the most favorable adjuvants to operative work, operative treatment gives the best results. Massage, pressure, applications of cold to reduce the effusion, posterior splint (the limb in extension), figure-of-eight roller bandage (or adhesive straps, binding down the fragments both above and below), and extending from the foot to the upper third of the thigh, with, later, a plaster-of Paris cast, constitute effective, non-operative treatment. Of the operative methods the following have been advised:—

First, open incision,—direct suture of the fragments through holes drilled in them, suture of the fibro-periosteal layers and mediate sutures through the tendon of the quadriceps and ligamentum patellæ.

Second, subcutaneous suture—by wire through the whole length of the fragments, or by silk through the tendons and crossing the front of the bone.

Third, subcutaneous permanent ligature surrounding the fragments in the sagittal plane and lying partly in the joint.

Fourth, temporary ligatures passing through the bone as in 3, or through the tendon as in 2, or through the bone and tied outside the skin.¹

The best is, probably, in the majority of cases, a median line incision of sufficient length, thorough cleansing of the joint cavity with warm saline solution, trimming away of dis-

organized structures, adjustment of the fragments, suturing of the periosteal edges with catgut, and, when indicated, heavy catgut suture through the tendon and the ligamentum patellæ crossing over the bone. Ruptures of the capsule should be adequately united with absorbable suture material, the limb put in complete extension with a posterior splint and a figure-of-eight retentive dressing. Other well-known methods are advised by Barton, Volkmann, Kocher, Ceci,² Aiken,³ Barker,^{4, 5} Stimson,^{6, 7} and Wolff,⁸ to which attention is directed.



FIG. 3. - F, Femur; T, Tibia; Fi, Fibula; P, Elongated, or hypertrophied, Patella.

Chaput^{9, 10} has shown that among other reasons for subsequent disability we must consider an hypertrophy or an elongation of the patella during and after union; thus mechanically interfering with functionation. (Fig. 3). His classification and rules of procedure are:

First, close union. Medical treatment and exercise.

Second, elongation of the patella by hypertrophy or a stiff bond with loss of flexion. Extirpation of the patella.

Third, short flexible bond. Massage.

Fourth, bond 2 to 5 cm. long with loss of flexion. Extirpation of the upper fragment.

Fifth, bond more than 5 cm. long and those cases of class 4 in which active extension is lost. Suture of the fragments after free separation of the lower portion of the quadriceps and under part of the capsule from the femur. This denudation of the femur to be effected through a curved transverse incision at the level of the lower fragment, or if the gap is

long, through a longitudinal one; for the denudation he would use the elevator or knife and would suture the fragments with wire because the strain might be too great for periosteal sutures.

Fractures of the femur comprise from 3 to 6 per cent of all fractures. They occur from the head above to the condyles below; they may be single or multiple, transverse, oblique or angulate, simple or compound.

Fractures of the head are rare. Braun,¹¹ Stimson,¹² quote single cases. The usual cause is a crush.

Fractures of the neck are a characteristic of advanced age, more frequently observed among women than men.

Fractures of the trochanter major,—“only a few specimens, not more than a dozen, of this injury, independent of associated fracture of the neck, have been reported.”¹³

Fractures of the trochanter minor,—about three cases are on record, reported by Bennett,¹⁴ Fenwick,¹⁵ Julliard.¹⁶

Fractures of the shaft constitute the most frequently observed variety. They are usually oblique, with more or less displacement. The lower fragment being drawn backward and inward, with a strong tendency toward outward rotation. Shortening is dependent upon the obliquity of the line of fracture, together with other general characteristics, plus muscular contraction. Angulation is usually forward, or forward and outward, occasionally backward or inward.

Fractures of the lower end, including epiphyseal separation, condyloid and intercondyloid fractures, are moderately frequent.

The case which is presented this evening illustrates a very common oblique fracture of the shaft at the middle third, in a child, the dressing employed consisting of a long lateral splint with traction. Attention will be directed to the details later.

Fractures of the femur have, from time immemorial, caused surgeons a vast amount of thought and anxiety, the usual result of treatment being far from perfect. This anxiety and thought is manifest in numerous methods of treatment that have been, and are still, in vogue. Among those most acceptable to modern thought are found the Hodgen suspension splint,

Buck's extension apparatus, various forms of long lateral splints, with and without traction, complete plaster-of Paris encasement, the double inclined plane, various forms of hip splints, anterior splints angulate at the knee, and vertical suspension.

In my experience and judgment the Hodgen splint properly applied, not only is the superior of other suspension appliances but is vastly more efficacious than all other forms of splints used in the treatment of fracture of the femur. (Fig. 4).

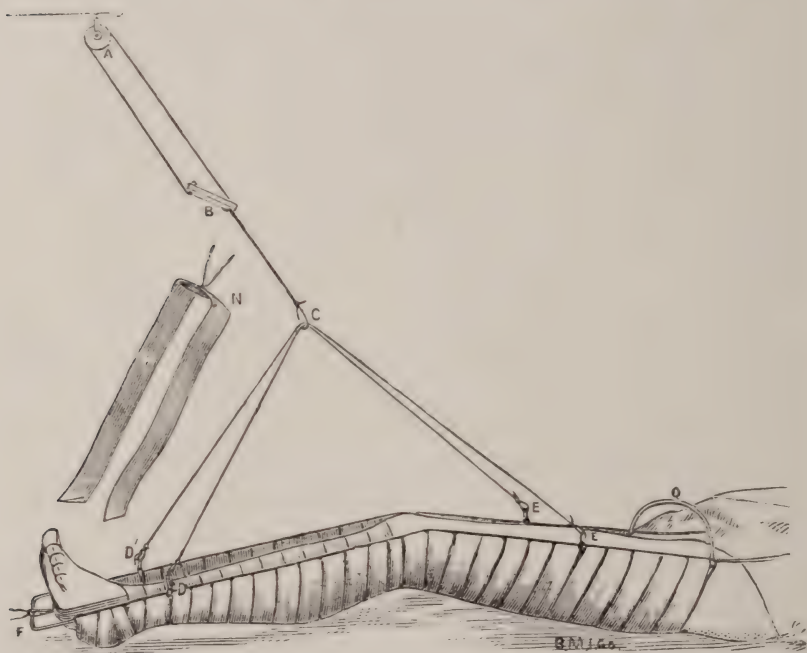


FIG. 4.—Hodgen Suspension Splint.
(Courtesy of the Bles-Moore Instrument Co.)

Hodgen himself¹⁷ credits Smith, of Baltimore, with having been the first who discerned and indicated the superiority of the suspension treatment in the management of fractures of the thigh. The general type of this apparatus has not materially changed since the inventor, later in his life, suggested the use of a foot-piece in particular "to prevent a temporary talipes equino-varus."¹⁸ He first advocated the "three pulley plan" over

the simpler cord scheme in May, 1866, in connection with a box apparatus for fracture of the leg.¹⁹ Also noted in June, 1866.²⁰ The advantages as suggested by the inventor are quite as patent and open to indorsement to-day :—

“In the use of this apparatus it will be seen that the perineal band is dispensed with, and that the weight of the body furnishes a counter-extending force. This may be aided by elevating the foot of the bed, but in subjects over 5 years of age the use of the opposite limb will enable the patient to keep sufficiently near the head of the bed to insure proper extension. The extending force will be the weight of the limb acting on a suspended cord which may be made more or less oblique as a greater or less extending force may be demanded. I have used this method of treating fracture of the thigh in every case coming under my care for the past eight years and have never had a bad result,—never a case of ununited fracture, never a case in which union was delayed beyond ten weeks. The cases treated represented nearly every variety of fracture of the femur, at almost every imaginable site, including those of the neck and condyles. One case of fracture of the neck was a trifle short but there has not been appreciable shortening in any other case, and these included many compound and comminuted,—from gunshot and otherwise,—and many oblique.* It has also been objected that in compound fractures the elevated position of the knee will cause the pus to percolate toward the hip. I admit the fact but suggest, as a remedy, that in no other splint can the position of the limb to the body be so readily changed as in those suspended, they may *hang down* as well as *hang up* and yet extension will be maintained if the suspending cord is sufficiently oblique. To enumerate briefly some of the advantages of this apparatus

*The worst result that has occurred in my hands in fractures of the thigh, of all forms, treated by means of the Hodgen splint, was in a woman about 60 years of age, with one of the so called intracapsular fractures, the case having come under my observation *a month* after the original trauma,—the patient occupied the interval walking about on crutches. Shortening did not exceed half an inch. Functional result was excellent.—[N. W. S.]

I will say it is cheap. Anyone can make it out of a piece of iron wire or two hoop-poles and a piece of twine. It is easily, quickly and painlessly applied. It avoids the necessity of the painful pulling by assistants in setting the fracture—the *fracture sets itself*. There is no excoriation from perineal bands, the ulceration of the heel, so apt to occur when the part is concealed, can always be prevented by shifting the supporting strips. The limb can be inspected and the surgeon can be

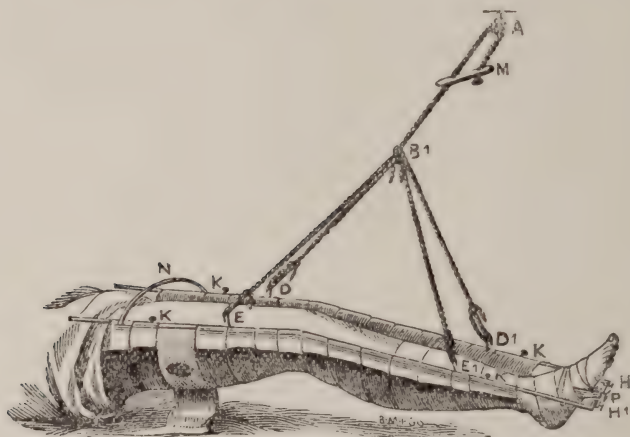


FIG. 5.—Hodgen Suspension Splint: Showing the readiness by which wounds may be made accessible by the removal of one or more of the imbricated strips. Suitable dressings having been made, the strip or strips are again pinned into position. In this diagram the inner bar is too long to permit the erect posture of the trunk; the point of attachment of the pulley is too near to the splint; the angle of the “pull” is incorrect, and the strips do not extend up sufficiently high on the outer side.

(Courtesy of the Bles-Moore Instrument Co.)

sure the parts are well in apposition without disturbing the dressing, as the fractured part is always exposed. The vessels of the part are not diminished by retentive and, of course, compressing apparatus, it thus allows a full supply of blood to the part and diminishes the danger of non-union. The patient may sit up or lie down at will without the possibility of disturbing the fracture, thus preserving the general health, making

bedsores impossible. Water or other applications may be made without deranging the dressing. In compound fracture, dressings may be applied to the wounded part and renewed at will without disturbing the fracture, thus diminishing very greatly the suffering of the patient, and the labor of the surgeon, at the same time while maintaining a cleanliness, so necessary in such cases."²¹ (Fig. 5).

Emphasis is laid upon the fact that the value of the splint is wholly dependent upon the correctness of adjustment. Mudd,²² with Nipher and Worthington, accurately estimated the amount, and demonstrated the success of the traction exerted by this splint. It was determined (selected case, weight 150 pounds, suspending cord forming an angle of 15° with the perpendicular) that the actual pull was 6.1 pounds. Though the traction, as estimated in pounds, is usually very low, it can not be over-emphasized *that it is adequate*, and produces no discomfort. It may be increased or diminished. The reason why the Hodgen splint is not more generally used lies in the fact that *it is commonly misapplied*. The secret of its success consists in its perfect mechanical adjustment, and unless the attending surgeon has either been born with a mechanical knack, or has acquired it, he had better use some other apparatus requiring less knowledge, which at the same time will also afford a less satisfactory result.

The lack of general and accurate knowledge in adjusting the Hodgen splint is encouraged by the faulty illustrations and text of the current text books on surgery.*

The pulley, which is ordinarily screwed into a ceiling beam, but may be attached to a properly-constructed frame, should be from eight to twelve feet above the floor. The angle of the suspending cord as usually portrayed is excessive. Varying with the height of the pulley it should range from 15° to 35° from the perpendicular. The comfort of the patient, as well as excellence of results, is dependent upon such factors.

The illustrations show the suspending cord knotted di-

*The diagrams in this article share this condemnation and are far from exhibiting the correct plan.

rectly to the two bar cords. Hodgen's "three pulley plan" provides an additional cord with a pulley at each end through which the bar cords play. This cord, in turn running through a pulley attached to the suspending cord at C, Fig. 4. A quicker equilibrium may be secured by this means, but a comparative instability results; for motion on the part of the patient may unduly tilt the splint in various directions. If the "three pulley plan" is used, it is well, after the exact position of the splint has been determined, to so fasten the pulleys that motion will be absent. By this means the splint is well within the control of the surgeon. Though more troublesome, under ordinary circumstances, the simpler cord scheme is recommended.

The child which is here exhibited has been treated with a long lateral splint with traction, sometimes called the Liston splint. The method of application is as follows: A starch or plaster bandage is passed around the body a number of times at the lower curvature of the thorax. This is permitted to become dry and hard, and against it counter-extension is made. The upper end of the splint is bound to this rigid circle and while extension is produced upon the leg, and the fracture ends approximated, the thigh and leg are bandaged to the splint and so retained. The disadvantages of this apparatus are manifest. The patient is constantly aware of the sense of tension; there is no motion at the hip joint, as a result the patient can not sit up; the trunk is immobile in at least its lower half, finally, inability to examine the site of fracture. It must be admitted that good results are at times secured by this apparatus, as in fact with nearly any other, but the opinion of the patient will heartily support any indorsement of the physician who has had practical experience with the Hodgen suspension plan.

The long lateral splint with traction finds a field of usefulness among the violent insane, patients in an aggressive delirium, and in overcoming the destructive tendencies of rebellious children.

The scheme as noted by Stimson of treating fractures of the thigh, in children, by vertical suspension is worthy of praise. The child is permitted to lie on its back, adhesive

straps attached to the leg on each side permit a loop by which a vertical pull is exerted, the cord running over a pulley placed at a desirable height; the contact with the bed should be so light that the hand can be easily passed under the pelvis. (Fig. 6).

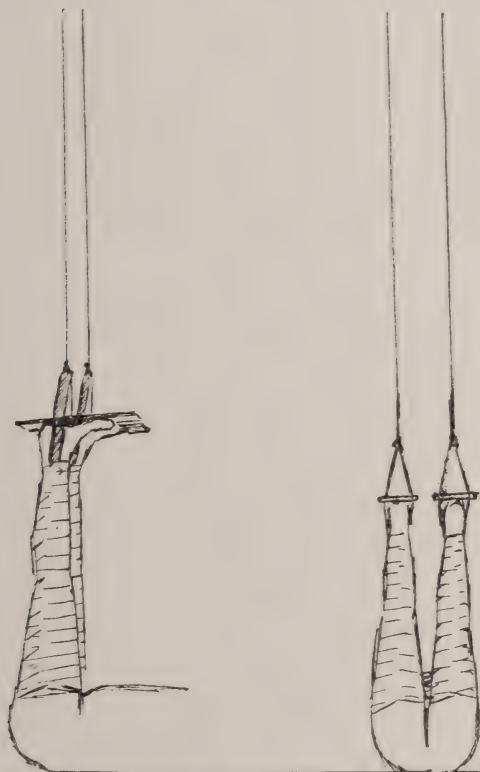


FIG. 6.—Vertical suspension plan of treating fractures of thigh in children. (Stimson).

It is a common mistake to attempt to keep the leg of the patient suspended in an Hodgen splint warm by means of heavy blankets; the mechanical equilibrium of the splint is destroyed. A light covering of cotton batting quilted into cheese cloth forms an inexpensive, light, warm and altogether satisfactory wrap. Another common error, noted in the use of these splints, is the covering in of both limb and splint with a circular bandage, thus obviating one of the manifest advantages,—that of permitting examination of the site of fracture.

This plan is permissible only when the patient exhibits a tendency to disarrange the details of the apparatus. Even then a camisole is more nearly indicated. It is also unwise to permit the inner bar of the splint to be too long; it should measure from 3 to 6 inches shorter than the outer bar,—proportionate to the size of the patient, thus permitting the patient to sit up. It is of vital importance in adjusting the final strips on this splint to continue them well up to, and beyond, the gluteal fold; they should fit quite as snugly as those upon the more distal portions of the splint, thus preventing outward rotation of the limb, and affording a most important support to fractures in the upper third, of the trochanteric region, and of the neck.

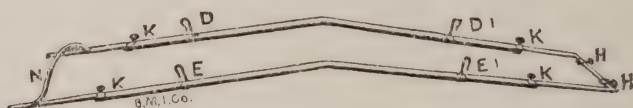


FIG 7.—Hodgen Suspension Splint,—Adjustable.
(Courtesy of the Bles-Moore Instrument Co.)

The adjustable Hodgen splint (Fig. 7) is a valuable adjunct to a private surgical practice, obviating the necessity of creating a special apparatus for each case. Owing to its jointed arrangement it may readily be resolved, formed into a portable parcel, and at the bedside quickly assembled. The splint as now seen in the shops is susceptible of the following improvements: 1. The sliding hooks D, D', E, E', should be provided with set screws. 2. Several metal foot plates (Fig. 4, N) of different widths, perforated at the center, should be provided. Through the central orifice should be thrust a bolt, whose threads engaging in a suitably threaded orifice in foot bar, (Fig. 7, H H), and terminating in a wheel or flange, would permit accurate increase of tension on the plaster strips, (Fig. 4, H), and further obviate the necessity of cords knots at the foot plate. 3. The sliding arch (Fig. 7, N), which is too low in the illustration, would be more serviceable if constructed of two upright rods, sliding on the bars, with set screws; each rod to have a perforation at the upper end to admit an horizontal rod; set screws to be provided for rendering rigid the rectangle when the proper width (dependent upon the diame-

ter of the thigh) had been ascertained. These modifications would not materially enhance the expense of this excellent splint.

The next case, a woman injured in a street accident, is of interest in that she has sustained a fracture of the clavicle, fracture of the olecranon, and fracture of the lower end of the radius, commonly known as Colles' fracture. Since her entry into the hospital she has developed a septic condition and is now delirious.

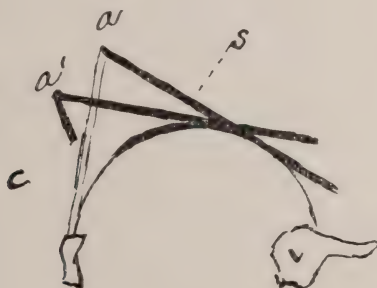


FIG. 8.—A, Acromion; C, Clavicle; S, Scapula; A', Position assumed by the Acromion subsequent to fracture of the Clavicle. (Stimson).

Fracture of the clavicle is of very common occurrence. More frequently noted in children than in adults. As observed by Krönlein, violence to the shoulder will produce fracture in a child, while approximately the same violence in the adult will cause a dislocation at the shoulder joint. Fractures occur in the outer, middle and inner thirds, the outer section of the middle third giving us clinically a greater number; the outer third is next in order of frequency. Fractures are partial or complete, single or multiple, simple or compound, transverse or oblique. The displacement noted is, the shoulder falling forward, downward and inward, due to want of support; the sternal end is drawn upward by the sterno-cleido-mastoid, and at times is pushed, and retained, upward by the outer fragment.

Complications are, as a rule, rare. Injuries to the blood

vessels by direct laceration or later aneurysms of the acromial branch of the acromio-thoracic artery, noted by Jacquemier,²⁴ as observed by Blaudin. Injuries to the internal jugular vein,²⁵, ²⁶ and of the brachial plexus,²⁷, ²⁸, ²⁹, ³⁰, ³¹, are recorded; and injury to the lung producing emphysema, has been noted by Vigarous, Velpeau, Huguier, Rühle, and Mercier.³²

Causes are muscular action, direct and indirect trauma. The most common of these is the third class. The ordinary method of production being a fall on the shoulder, on the hand or on the elbow. The usual signs are well known, the most marked,—a falling inward of the shoulder, due to lack of support, is very neatly illustrated by a diagram originating with Stimson. (Fig. 8).

Treatment consists in the reduction of the displacement and retention of the fragments in proper position. Replacement of the shoulder is secured by efforts which will lift the shoulder backward, upward and outward. In treatment of cases where a particularly smooth recovery is desired with a minimum amount of deformity it is advised to put patient on the back for three weeks upon a hard mattress with the head inclined to the affected side in order to relax the pull of the sterno-cleido-mastoid; arm to be raised upon a pillow and fastened over the chest; narrow cushion between the scapulæ, with continuous digital pressure retaining the fragments in position. Ordinarily, however, the well-known Velpeau and Sayre dressings will meet all indications if properly applied. If much displacement exists, a plaster-of-Paris cuirass is recommended. Often a simple sling will produce admirable results. This sling should not be, as is so often seen, a ribbon or a narrow bandage, or a narrowly folded kerchief, sustaining the weight of the entire arm and forearm by a pull at the wrist, but should be of generous size extending from the tip of the little finger to the elbow, the apex of the triangle being folded behind the arm, brought well forward and then pinned into position on the inner fold. Such a sling will give genuine comfort to the patient and may be relied upon to do all that a sling may be expected to accomplish.

Fractures of the olecranon are comparatively rare. They

may be oblique, transverse, double oblique, but rarely comminuted or compound. They occur from the upper end of the process, to the base of the coronoid.



FIG. 9.—Fracture of the Olecranon. E C, External Condyle; U F, Upper Fragment.

Cause.—Less frequently a direct fall on the elbow, more frequently a fall on the elbow plus contraction of the triceps or contraction of the triceps alone. We know, experimentally, that direct violence, as a rule, comminutes. The usual lesion observable is a transverse fracture at the narrowest section; mobility of the upper fragment with impairment of extension constitute the most marked symptoms. Separation of the fragments is frequently not excessive, owing to attachments, chiefly tricipital, and to a relatively dense periosteum. We may ordinarily promise our patients fibrous union, rarely with perfect, but frequently with excellent, ultimate functionation. Poor results are due largely to the character and tenuity of the fibrous union together with the not infrequent presence of intra-articular trabeculation and articular and periarticular change.

Treatment methods range from complete extension to complete flexion; probably the best for the majority of cases is moderate flexion with an anterior splint. If difficulty is found in co-apting the fragments complete extension may be demanded with the additional safeguard of a fibroperiosteal suture. In cases presenting unusual difficulties a suture

through the tendon of the triceps above and a hole drilled through the ulna below will give good results. The simple dressing as shown in Fig. 10 will be found serviceable.



FIG. 10.—A S, Adhesive Straps exerting traction on the upper fragment and crossing on Forearm.

Colles' fracture.—Fractures of the lower end of the radius are second only in frequency to fractures of the ribs. More frequently noted in the elderly. It is of interest to realize that this fracture has been recognized for but an approximate hundred years. Before that it was supposed to have been "a dislocation of the wrist backward." We owe our first description to Pouteau.³³ It was recognized by Colles in 1814,³⁴ but his opinion was not generally adopted nor seriously considered until Dupuytren, as a result of a post-mortem examination in 1820, again clearly demonstrated the anatomical condition.

The usual *site* of fracture is from one-third to three-quarters of an inch above the articular border, though ordinarily supposed to be higher. The direction of line of fracture may

be oblique laterally or antero-posteriorly, but usually transverse, with or without comminution. To the skiagram we owe accurate knowledge of the exact lesion and the complicating features; for it is comparatively unusual to secure a post-mortem on an individual who has recently or immediately sustained a fracture of the lower end of the radius. (Fig 12).



FIG. 11.—Skiagram exhibiting a normal wrist joint. (The dark spot over the head of the radius is due to the presence of a bullet.

The *cause* is usually a fall upon the palm of the hand. Three theories have been advanced to explain the existing lesion. First, fracture by splitting or crushing of the cancellous structures; second, fracture by dissolution at the weakest point; third, fracture by forced dorsal flexion of the hand attended by extravagant tension through the anterior ligament. Of these three the latter is least frequent; practically all fractures are explainable by means of the first and second propo-

sitions. That the tension of the anterior ligament is, in the majority of cases, not excessive, may be noted by Fig. 13,—a

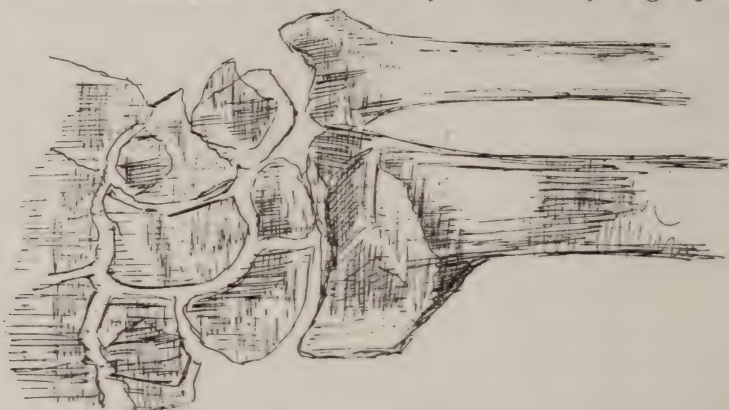


FIG. 12.—From a Skiagram of a recent Colles' Fracture exhibiting Comminution.

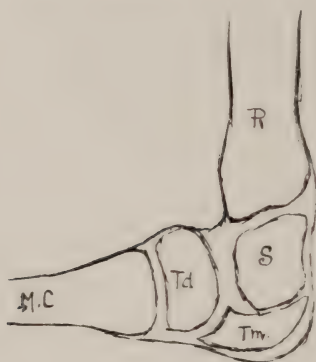


FIG. 13.—M C, 2d Metacarpal; Td, Trapezoid; Tm, Trapezium; S, Scaphoid; R, Radius.

section through the hand and wrist. This diagram also demonstrates the ginglymoid angulation occurring between the second and first carpal tiers. It is worthy of note that the average fracture of this type does not evidence an etiological flexion sufficient to drive the second tier against the end of the radius, and, further, that the so-called "cross strain" produced by the anterior ligament would hardly occur save in such marked flexion; and even then an expectation of fibrillar dis-

solution, if not actual massive rupture, of the flexor muscles would, in reason, be expected to probably precede it.

The *syntomatology* and *diagnosis* are well known, for it is one of the easiest of fractures to discern. Union should occur in about a month. Deformity depends upon the age of the patient, completeness of the original reduction, and perfection of retention apparatus, together with immediate or subsequent complicating factors; ultimate functionation is ordinarily good. Traction upon the hand with manipulation of the fragments until replaced, aided by an anesthetic when needed, is usually sufficient. Dressings should be competent to retain fragments in position and at the same time permit moderate dorsal flexion with movable fingers. The usual palmar and dorsal wooden splints, padded, the former extending to the metacarpo-phalangeal joints, the latter to the carpo-metacarpal joints, if properly applied and retained give excellent results. If plaster-of-Paris is considered necessary, it should be so applied that it may be readily removed, permitting

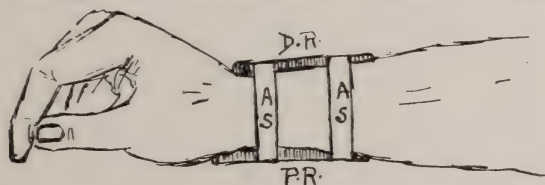


FIG. 14.—D R, Dorsal Roller; P R, Palmar Roller;
A S, Adhesive Straps.

inspection and massage. A dressing such as is demonstrated in Fig. 14, has in my hands given satisfactory results. This consists of a narrow roll of bandage material (or at times adhesive plaster) placed on the dorsal and palmar aspects, lying snugly between the radius and ulna. The palmar roll should extend somewhat below the dorsal. Two adhesive straps, one above, and one either at, or immediately below the site of fracture, with a suitable sling, complete the dressing. Bandages may be permitted if desired. By this method there is, to a certain extent, a splinting of both radius and ulnar from within and without, from the dorsal and palmar planes. A simple sling, or a sling plus an ordinary roller bandage or a plaster-of-Paris encasement, gives good results in selected cases. Massage given during the application of the splint, when possible, and after its removal, with the judicious use of hot baths is advised.

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EDITORIAL.

BACTERIAL SELF-PURIFICATION OF STREAMS.

The instinctive following of the first law of nature, namely that of self preservation, is daily demonstrated by mankind whether individually or collectively. Self-preservation is the dominant thought and impulse in the individual being, and this applies with equal force to the efforts of communities or large collections of individuals to ward off harmful influences or agencies that threaten to diminish the healthful stability or well being of its component parts. The reasoning faculty of man has taught him that preservation of health is essential to the securing of the greatest results from his efforts in whatever way they may be used, and that the sanitary arrangements for the preservation of a healthful condition of an army is more essential to its existence than protective fortifications. In urban communities, where a large number of individuals are segregated, each may become, by their proximity, a source of danger to his neighbor unless a common method of sewage disposal, free from danger to each, is used. It thus devolves upon the government of organized communities to regulate and provide that which is impossible for the individual himself, namely a pure water supply and an adequate sewage disposal. As streams of water are nature's sewers, they are utilized by man as far as possible for the disposal of this kind of waste and debris, and while at the same time are used as a source of water supply for the same and other communities. The ability of the water of such streams to purify itself in a given distance is a question which the two largest municipalities in the Mississippi Valley are striving to determine, and one of the highest scientific and sanitary importance. No community has the right to jeopardize the health of another by the manner of the disposal of its sewage, and the highest tribunal in the United States has been called upon to decide whether or not this condition exists. To this end the

water of the rivers into which flow the sewage of Chicago from the outlet of the drainage canal, to and including the water in the mains in the city of St. Louis, have been subjected to the most thorough and exhaustive examinations by scientific observers from both cities, that has probably ever been undertaken. As the results of this work is to be used for evidence before the Supreme Court of the United States, it is not available at present for the purpose of comment.

Recently Dr. Edwin Oakes Jordan, who has been making investigations of this sewage-laden water, on behalf of the City of Chicago, reported some of the results of his work in the December number of the *Journal of Experimental Medicine*. According to this report there is a more or less rapid fall in the number of bacteria present in the water as the distance from Chicago increases, with the exception that there was an increase in the number at Wesley City where the sewage of the manufacturing town of Peoria is added to that from Chicago.

Jordan dismisses the possibility of the purification of this contaminated water by mechanical agitation and aeration, and accounts rather for the diminution in number of the bacteria by dilution with purer water from other sources and to an insufficiency of the food supply for the bacteria through its destruction or sedimentation. He states that "the solid organic matter in the sewage is either destroyed while still in suspension or shortly after deposit. The natural effect of this shrinking of the food supply is to cause a diminution of the bacterial population dependant upon it. That destruction of large quantities of solid albuminous substances may occur through bacterial agency has been conclusively showed in the so-called septic tank method of sewage disposal. * * * The decomposition of large quantities of albuminous substance is first accompanied by great bacterial reproduction and this is invariably followed by a season of speedy and extreme mortality of the bacteria. In the causes connected with the insufficiency or unsuitability of the food supply is to be found the main reason for the bacterial self-purification of streams"

A diminution, from decomposition or otherwise, of albuminous matter in water will result in a decrease of the number of the bacteria present, but it is not certain that these conditions obtain in the volume

of water and sewage that is at present passing into the streams in question.

Previous to the opening of the present drainage canal the pumping station at the end of the Illinois and Michigan canal was lifting 50,000 cubic feet of sewage a minute from the Chicago River into the Des Plaines River, which in turn emptied into the Illinois River, and this into the Mississippi River. So small was the effect of the pumps that a current toward them was almost imperceptible. As a natural result, this reservoir of sewage became a large septic tank in which, through oxidation and nitrification of the albuminous matter, the aerobic bacteria, being deprived of oxygen, perished, and the sewage then pumped into the Des Plaines river comparatively free from noxious bacteria.

With the opening of the gates of the drainage canal the conditions which had resulted in the formation of a large septic tank were removed and a vast quantity of sewage, eighty-five per cent. of the entire sewage of Chicago, is swept southward by a current of such velocity as to endanger the shipping in the canal and the Chicago River.

Dr. Jordan fails to state the morphological characteristics of the bacteria found, or the proportion of the typhoid and colon bacilli to the entire number. Many of the bacteria found in water are not pathogenic to man. These are doubtless the ones which rapidly decrease in number as the flow of the stream carries them farther from the source of its contamination. On the other hand the typhoid bacillus is markedly resistant to conditions under which other bacteria are destroyed, so that farther from the outlet of the canal the greater is the relative proportion of the typhoid bacilli to the total number present. The addition of pure water from other sources will diminish, by dilution, the number of typhoid bacilli present in a given amount of water, but it causes no decrease in their actual number or toxicity. Deposition, through sedimentation, undoubtedly removes large numbers of pathogenic organisms from the water, but this does not necessarily mean their destruction, and where the deposition occurs in the bed of a stream, a sudden increase of the volume of the water of the stream above the normal, would carry on in increased numbers, the bacteria deposited in its bed.

The work of Dr. Jordan, while painstaking, is not conclusive, and

shows only a diminution of all kinds of water-borne organisms which is evidently due to the dilution by water from other streams emptying into the Illinois River. The chemical tests made by him show only a small decrease in the relative amounts of the chemical constituents of the sewage.

THE PHYSICAL SUPERIORITY OF THE INHABITANTS OF THE MISSISSIPPI VALLEY.

The action of the United States Naval Department in establishing a recruiting station for sailors in the City of St. Louis was not due solely to the possibility of a greater number of applicants but to the fact that recruits from the Mississippi Valley have been found to be physically superior to those from the Atlantic sea board, which section has, hitherto, supplied the greater number of sailors for the navy.

The topographical conditions of the Mississippi Valley are conducive to the production of the highest types of physical being found anywhere in the world, and it is not surprising that the Naval Department has discovered that its recruits from this section are larger, more robust and healthful, and consequently make better men-of-war's men than those from other localities.

In this connection, the report of Passed Assistant Surgeon Dr. Edward R. Stitt of the U. S. S. *Hartford*, to the Surgeon General of the United States Navy (*Med. Record*, Dec. 22, 1900) is of interest.

He says that: "In connection with the physical examination of the landsmen received from the *Richmond* and *Vermont* on the arrival of the *Hartford* from the Pacific station, a great superiority has been observed as regards the outward manifestations of a sound physique among those born in the middle West over the natives of the Atlantic coast. There were noted among the recruits from the Eastern cities a large number of cases of persons who would probably develop unfitness of the service by reason of catarrhal conditions of throat and nose, as well as relaxation of inguinal rings; these conditions being far less frequent among the recruits from the Western States. While the most striking feature differentiating the two classes was as regards general

appearance, yet the following averages, obtained from measurements, are in a degree indicative of this superiority: Of 163 men, natives of the Eastern coast cities, the averages were: age, 20.3 years; weight, 126 pounds; height, 66 inches; chest expansion, 3.2 inches; circumference of arm, 11 inches, and circumference of thigh, 19 inches. Among those born in the middle West, numbering 92, the average was 20.5 years; average weight, 135 pounds; average height, 67 inches; average chest expansion, 3.4 inches; average circumference of arm, 11.5 inches, and average circumference of thigh, 19.5. Of the 251 recruits who were enlisted for this ship about one year ago, all coming from the West, the following averages pertained at time of first examination: Age, 21; weight, 139 pounds; height, 66.6 inches; chest expansion, 3.2 inches; circumference of arm, 11.7 inches; of thigh, 19 inches."

Some months ago a lay journal published the results of a series of interesting investigations undertaken for the purpose of ascertaining the comparative differences between the students in female colleges of the East and the West as regards their physical development, which might result from conditions peculiar to their places of birth and their environment from childhood to early womanhood. It was found, as a result of a large number of measurements, that while the average of the cephalic measurements of the young women reared in the Eastern States were slightly greater, she fell behind the Western college girl in all other respects physically. The average of the measurements of the Western-reared young women, who, almost entirely, were those from the Mississippi Valley, showed a larger chest measurement and expansion, greater height, as well as an increased diameter and longer reach of both the upper and lower limbs. College girls were made the subject for the investigations as representing a class whose conditions of life were nearly the same.

These investigations prove that the inhabitants of the middle West are physically superior to those of the effete East, and following the rule of *mens sana in corpore sano* will also show a virile mentality that is not less than that of any other region.

OVARIAN TRANSPLANTATION.

Evidence is constantly accumulating that the ovaries, as likewise the thyroid and other glandular organs of the body, when successfully grafted onto another body or to another part of the same body, will continue to exert their influence. Segments of thyroid gland, when transplanted even in remote parts of the body, usually continue to perform its function to such an extent that the development of myxoedema is prevented.

A number of instances have been reported in which there was a continuation of menstruation after the removal of both ovaries. Dr. Robert T. Morris, of New York, explains this on the ground that some of the ovarian tissue is inadvertently left and that this is sufficient to keep up the function, at least for a time, and to prevent the symptoms of the artificial menopause.

Often the ligature is placed snugly around the ovary and so close to it that when the latter is cut away a small segment of the ovary is left on the distal side of it. Such a condition he observed in a patient on whom he had previously removed both ovaries on account of pyosalpinx, and having again, at a later period, to open the abdomen, the small portion left was found to have retained its vitality. Led by this observation, and by the fact that the transplanted thyroid gland retained its vitality, Morris, in 1895, one year before Knauer published his experiments on ovarian transplantation on rabbits, began his experiments of transplanting the ovaries in women.

In all, twelve patients were thus experimented upon, in each of whom various pathological conditions necessitated removal of diseased appendages, and in all more or less marked improvement resulted. The grafts were placed in various situations; some were arranged so that the free surface of the ovary would project into the lumen of the tube, others placed into an opening in the fundus of the uterus and projecting into its interior. In the greater number of those experimented upon, and especially in the most recent cases, the ovarian specimen was grafted upon the broad ligament in as nearly the natural situation of the ovary as possible. The broad ligament is split and the raw surface of the ovary stitched to the raw surface of the broad ligament so

that the uncut surface of the ovary projects outward. This appears to afford the best opportunity for the continued nourishment for the graft. Pregnancy occurred in one instance where the graft had been placed so as to occupy the lumen of the tube; in this case, however, the woman aborted at the third month, presumably on account of persistent pelvic adhesions. All the cases showed benefit—some only temporary, others permanent. Morris states that the best results obtained from this procedure was the avoidance of the artificial menopause, and that the patients continue to menstruate in a sufficiently normal way to indicate that the grafts have retained their vitality.

Morris' experiments are noteworthy from several points of view, both on account of the priority of his work, the number of his cases on human beings, the excellence of his results, and the undeniable physiological demonstration of an internal ovarian secretion. The effects of the grafted ovary admit of no other explanation than by this latter condition. Morris accepts it as conclusively proven.

Dr. Gould's New Journal.—*American Medicine* is to be the name of the new medical weekly to be established by Dr. George M. Gould of Philadelphia, late editor of the *Philadelphia Medical Journal*. The new venture gives promise of a most flattering success. We are informed that more than \$40,000 in stock has been pledged and two thousand paid subscriptions received, though even a prospectus has not been sent to the profession or a canvasser put in the field. Dr. Martin B. Tinker will be assistant editor to Dr. Gould.

Withdraws Offer of Reward.—Charles Broadway Rouse, a millionaire merchant of New York, who offered a reward of one million dollars to anyone who could cure his blindness, due to atrophy of the optic nerve, has withdrawn the offer and resigned himself to the condition. His proposition has been before the public for several years past, and during that time he has been besieged by quacks, charlatans, and all sorts of healers. During the greater part of the time he has paid a substitute who was afflicted in the same manner a regular salary for submitting to experiments in various forms of treatment.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

Remarks of the President, Norvelle Wallace Sharpe, M.D., On Assuming the Chair, January 3, 1901.

Your attention is invited to a statement of the history and work of the Medical Society of City Hospital Alumni, and the proposed policy and scope of activity for the year 1901. At a called meeting November 4, 1891, at the Hotel Rozier, forty-two ex-internes of the St. Louis City Hospital took the necessary steps to form a society composed of men who had served as interne or superintendent in that institution.

NAME.—Organization was duly effected under the name "The City Hospital Medical Society." This title obtained until the year 1898 when the name, "The Medical Society of City Hospital Alumni" was substituted and to-day remains. For a comparatively extended period the Society had no fixed place of meeting, but fortunately this season of migratory sessions has been succeeded by the use of the quarters of the Board of Education. Renewed appreciation of its courtesy is herewith tendered.

PURPOSE.—The purpose of this body has been, and is, to bring into cordial contact, both from the scientific and social aspects, those who have undergone the hardships and enjoyed the manifold advantages of a service in the City Hospital. The former purpose has been elaborated by means of semi-monthly sessions at which papers and discussions pertaining to medicine and correlated themes have been demonstrated, and further enriched by clinical and pathological material; the latter by a series of informal lunches following the sessions.

REPORTING THE PROCEEDINGS.—After mature consideration it was deemed advisable to expend the money consumed in these lunches in accentuating the scientific phase of the Society's function. To that

end the lunch (at the expense of the treasury) was abandoned May 5, 1898, and in its stead was substituted the service of a stenographer. Since that time the proceedings of the Society have been duly recorded and published in a journal of suitable character; the same in bound volumes furnished to individual members on application to the Secretary.

It affords pleasure to here bear testimony to the faithful service and unvarying courtesy of the official stenographer, Dr. Edward J. Gooden; his generous co-operation has extended his service far beyond the limits of contract and remuneration. The Chair voices the sense of obligation of the Society.

MEMBERSHIP.—At various times the moot question as to the desirability of an active membership consisting of others than internes of the St. Louis City Hospital has received consideration. The proposed expansion has invariably failed to carry. The Society is, as it was, exclusive. The active membership list at present includes 190 men, of which 148 are resident and 42 are non resident. Owing to the increased staff of late years in control at the City Hospital, a larger list of eligible material for assimilation by the Society is annually presented. To encourage resident internes to become members of the Society, to spare them the burden of an annual due, and to stimulate, by this gratuitous entry, their contribution to the scientific work of this body; resident internes have been exempted from the payment of the annual due for the current year of service. It is a matter of regret that since this plan was instituted, this concession on the part of the Society has not been met by a more generous response on the part of the various Hospital staffs. The yearly increase of the Society, including both resident internes and colleagues in active practice, approximates 25. It is worthy of note that voluntary withdrawals from membership are notably rare; the hand of Death ordinarily being required to sever a relation which has proved itself both enjoyable and profitable.

NECROLOGY.—Six members, in good standing, have died since the birth of this organization, essential data regarding these colleagues have been recently placed on file with the Secretary by the Committee on Revision during the administration of my predecessor in the chair.

NOTICES TO COLLEAGUES.—The Society furnishes, at present, forty

complimentary copies of the notices of its scientific work to colleagues and reputable medical journals. Regret is expressed that a more general co-operation in the work of this body has not been tendered by those whom we have thus considered as congenial workers. It is, at this point, germane to record that though this Society is restricted by Article III. of the Constitution to a membership exclusive in source, yet the spirit of the body is notably catholic. We welcome all choice spirits, whether members of the faculty, or those engaged in search in kindred fields, to participate with us. These co-workers are debarred from but the Society franchise and the payment of dues for current expense. The Society acknowledges its indebtedness for valuable scientific contributions, received, from time to time, from this source.

DEPARTURES FROM PRECEDENT.—Though the Society has confined its labors to a rather conventional line of policy, it has, within the last two years upon three occasions ventured to depart from precedent. *The first* was a gratuitous medical inspection service of certain selected public schools; and was tendered with appropriate explanations and deductions to the Board of Education, with the hope that said Board might be convinced of the imperative value of this method of safeguarding the health of the schools and the public at large. The Chair notes that this venture of the Society was successful, and that though regret is felt that the Board was unable to institute so valuable an adjunct to its field of activity (on account of lack of funds), yet a forcible and practical exemplification of the plan was made, and future laborers in this field may be justified in erecting a superstructure upon the substantial foundation thus laid down. *The second* was an effort made to check the lawless use of the yearly pittance set aside in the municipal appropriation for the erection of a new City Hospital; various efforts at that time being made to divert this fund into extraneous channels. This Society as the initiative force, acting in harmony with other wings of the body medical, both in open meetings and before the municipal authorities, was a factor in checking this disgraceful political scheme. The daily press has at various times credited this successful operation to the proper sources. *The last* effort was a meeting held for the presentation of the proposed scheme and plans for the new City Hospital. Members of the pro-

fession were invited to enjoy our hospitality and discuss an elaboration of the facts as conceived by various municipal officers, including the President of the Board of Public Improvements, the Municipal Architect, members of the Board of Health, and members of the original Hospital Commission. Action by the Society was not taken owing to the fact that modification of the plans then exhibited was being made. Attention will be directed to this matter later. It is without doubt patent that the Society has sustained its high traditions in these departures from its general plan. It is recommended that the same wise policy of conservatism prevail, sufficient elasticity in control being permitted to enable this body to be of service to the public weal.

SCIENTIFIC WORK.—The scientific work of the Society during the past year has been healthful, owing largely to the unflagging zeal of the members of the Committee on Scientific Communications. Attention is called to the fact that up to date this Committee has been compelled to employ extraordinary efforts in order to keep on hand scientific pabulum sufficient for the consideration of the Society. Records show that out of a membership of 190, of which 148 are resident and 42 are non resident, but 27 contributed to the scientific work during the year 1900. It is desirable that, as a body and as individuals, we should not fail to recognize the importance of the service rendered us by the Committee on Scientific Communications; let us, on the other hand, guard sedulously from the tendency of permitting it to become either a mendicant or a beast of burden. To this end cordial personal co-operation with the Committee is a prime essential.

FINANCE.—The finances of the Society, as shown by the report of the Treasurer for 1900, are far from what should exist. A deficit of \$2.00 appears; that this is not greater is due to the generous forbearance of our stenographer, Dr. Gooden, the actual deficit being \$52.00. Admitting the drain upon the treasury induced by recording the proceedings of the Society, it is held that we are not ready to strengthen our financial standing by elision of this source of expense. The thoughtful consideration of the members is directed to the patent fact that our financial stringency is due, not to unwise expenditures,—but rather to delinquency in meeting the payment of the annual dues by a proportion of the membership in excess of any reasonable num-

ber. Though this has been a vital matter to some, a regrettable indifference, upon the part of a major portion of the membership, to this continued financial exigency exists.

THE ANNUAL DINNER.—During the latter portion of the year 1899 a plan to institute a society dinner to be known as "The Annual Dinner," to occur yearly, the first Thursday in January, was discussed and adopted. The purpose involved being for the members of the Society to meet upon a purely social basis, thus serving as an admirable substitute for the lunches formerly in vogue following the semi-monthly sessions. The price, one dollar per plate (not to include extras), was adopted for the purpose, not only of simplicity, but that no member of modest income should be deterred from participating. The first Annual Dinner was held at the St. Nicholas Hotel, January 4, 1900; 55 names appeared upon the subscription list; 39 members and 3 visitors were present. The affair proved a success and it was generally conceded that the Society would act wisely in encouraging a cordial participation by the entire body. During the latter portion of the year 1900, the Committee on Entertainment was authorized to take the necessary steps toward providing for the celebration of the second in the series of the Annual Dinners. The same restrictions regarding payment of plate fee in advance, and the minimum limit of twenty-five prepaid subscribers, which obtained in the preparation of the first dinner, prevailing. It is a matter of no inconsiderable regret that, for various reasons, unaccountable perchance, a sufficient number of prepaid subscribers was not secured. Automatically, therefore, the failure of the Dinner of 1901 occurred. Thanks to the ready thought of the Secretary, those having the Dinner in charge made arrangements for a social gathering with refreshments for the subscribers to the Dinner Fund to follow the session of January 3, 1901, that so gracious a custom should not die a-borning, and that the semblance, if not the actuality, of the Annual Dinner of 1901 might be preserved.

COMMITTEE DATA.—During the occupancy of the chair by Dr. George Homan, the excellent plan of providing the standing committees with books suitable for making note of important committee work done during the current year, the whole to be compacted and rendered as a report at the Annual Meeting of the Society, was insti-

tuted. The plan was but spasmodically executed by the various committees. The Chair requests that the Chairmen of the standing committees for 1901, make note of their associates, take steps toward an early consultation regarding their special duties for the year, and secure their special committee books, to the end that the Society may, not only enjoy the benefit of their labors during the year, but having the facts compactly presented at the next Annual Meeting, in the form of special committee reports, be prepared to offer suggestions and criticism tending toward increased committee efficiency and the general welfare of the Society.

STANDING COMMITTEES FOR 1901.—The standing committees for 1901 are as follows:

Executive Committee: Dr. William C. Mardorf, 1888-89, Chairman; Dr. Greenfield Sluder, 1888-92, Dr. Hudson Talbott, 1898-99, Associates.

Committee on Scientific Communications: Dr. Harry S. Crossen, 1892-95, Chairman; Dr. J. G. Moore, 1889-90, Dr. H. L. Nietert, Resident Superintendent, Associates.

Committee on Publication: Dr. Given Campbell, 1889-90, Chairman; Dr. Amand Ravold, 1881-82, Dr. John C. Falk, 1890-91, Associates.

Committee on Entertainment: Dr. William D. Spore, 1861-64, Chairman; Dr. P. V. Von Phul, 1896-97, Dr. Walter Baumgarten, 1896-97, Associates.

The duties of these committees are well known (see Sections VI., VII., VIII. and IX. of the By laws). Cordial assistance in furthering their efforts, at the hands of the membership in general, that the health and work of the Society may be vigorous, is urged.

RECOMMENDATIONS.—The following recommendations from the Chair are laid before the Society for consideration:

1. That the function of the Executive Committee be increased so as to include an annual revision of the membership, necrologic, and mailing lists of the Society; its findings to be incorporated in its annual report.
2. That no name be added to the mailing list of the Society unless having been favorably passed upon by the Executive Committee.
3. That the Committee on Scientific Communications be authorized to promptly take the requisite steps toward securing a meeting at which appropriate municipal officers be invited to present the altered plans for the new City Hospital buildings, to the end that this Society

may place itself on record as either indorsing or condemning the proposed structures.

4. That the Committee on Publication be authorized to determine whether the bound copies of the proceedings of the Society for 1898 and 1899 may not be delivered with the proceedings of 1900—gratuitously, or at a merely nominal figure. Attention is directed to the fact that our contract with the *COURIER OF MEDICINE* calls for distribution of copies of proceedings for 1900 to the individual members.

5. That the Committee on Entertainment be encouraged to cover the failure of its predecessor by bringing to a successful consummation an Annual Dinner in January, 1902.

6. That a "Committee on Necrology" be added to the list of standing committees.

THE ADVISORY COUNCIL—The Advisory Council as indicated in Article VI. of the Constitution, consists of the ex-Presidents of the Society. Its duties are defined, and its members exempted from service on standing committees. As compensation for the loss of the service of these valued members as committeemen, the Society is justified in expecting council and recommendation of rare merit. Without consuming time in adverting to the labors of this body in previous years, the following themes are recommended to their attention with the hope that in the near future the Society may profit by their deliberations :

1. The elaboration of a plan, or series of plans, for the increase of interest in the work of the Society by that wing of the Society that may be with propriety dubbed the non-active members.

2. The elaboration of a plan for placing the Treasury of the Society upon a substantial basis.

3. Recommendations regarding the conferring of honorary membership upon colleagues of acceptable qualifications, with suggestions and restrictive safeguards.

4. The advisability of securing a fund, the interest of which may serve as an Annual Prize Fund to be awarded to the best thesis produced in competition ; or suggestions by which the same end may be secured, other means and methods being utilized.

5. The advisability of increasing the duties of the Advisory Council so that it may perform the function of a Nominating Committee.

CLINICAL MEETINGS.—It seems fitting that the Secretary be authorized to communicate in writing to Dr. H. L. Nietert, Superintendent of the City Hospital, the appreciation of the Society for clinical facilities afforded this body during the year 1900; and the acceptance by this Society of similar courtesies (as offered to the Committee on Scientific Communications, 1900) in 1901.

POLICY FOR 1901.—In defining the policy of the Chair for the current year attention is called to the "Duties of the President" as laid down in Section II. of the By-laws. It will be observed that his function is largely, if not entirely, executive in character. That, in addition to this, he may be reasonably expected to perform his share in all that pertains to the profit of the Society may be, with justice, inferred. That it should be demanded of him to serve as an inciter of interest, or to be held responsible for the success of the year's work is unreasonable. His value is largely dependent upon his efficiency in performing the duties of the presiding officer. Too great stress can not be laid upon the fact the success of a year's work as well as the failure of the work of a year is due not to the Chair but to the individual member. The dignity of the Chair is not enhanced by expectations tending toward orientation of the work of the Society, whether in sessions, by being compelled to call upon individuals for remarks, or in the intervals between meetings, being obliged to assume duties that, of right, fall within the province of individual or committee. As a general policy of the Society, in its sessions, the Chair recommends that the members make special efforts to be present promptly at 8 o'clock, and that they so seat themselves that they may form a compact body in front of the platform; that guests be welcomed and conducted to desirable seats; and, further, that Rule 2, relating to limitation of discussions to five minutes unless by unanimous consent otherwise, be more strictly upheld. Appeals from the decision of the Chair in cases of faulty ruling, are not only desirable in the interest of right, but will be accepted in the spirit of courtesy. The success of the work of this Society for the year 1901, if striven for by the individual member, rather than being left to the efforts of the officers or committeemen, may be taken as an assured fact.

REPORTS ON PROGRESS.

MEDICINE AND THERAPEUTICS.

The Relative Importance of Valvular and Muscular Lesions in Diseases of the Heart.

Prof. Solis-Cohen (*Jour. of Am. Med. Ass'n.*, January 12, 1901) recognizes that in lectures and clinical demonstrations so much stress is placed upon valvular lesions that the fact is often obscured, that as long as the heart muscle is able to compensate, the valvular lesions give rise to few or no subjective symptoms, and that until there is such failure of compensation no treatment is required except that the patient exercise prudence in diet, work and exercise. He cites the case of a man of over 70 years of age who had a clear history of mitral incompetence for more than 30 years, but who had not required medical treatment on that account.

"Sometimes the hypertrophy exceeds the needs of circulatory compensation, in which case temporary diminution of the patient's activity, purging and the judicious use of bromides and aconite will usually subserve the therapeutic indications."

Mitral narrowing, if considerable, presents an obstacle which even considerable muscular hypertrophy is not able to fully overcome, and in such cases we note a marked disproportion between the great systolic energy and the small and weak radial pulse.

In this condition he finds useful strontium bromide, and sometimes small doses of aconite, the effect being carefully watched. He has also seen benefit from the apparently paradoxical combinations of aconite and digitalis.

Acute myocarditis is of common occurrence in infectious fever, and if not recognized and the patient is allowed to resume ordinary work and exercise too early, may result in permanent impairment of the heart.

Chronic myocarditis does not present the histological characteristics of an inflammatory condition, so that he prefers to simply designate it as a "myopathy" or muscle disease.

The principal cause of this condition is the long continued though perhaps moderate use of alcohol, especially when tobacco is used at the same time; their action being first to disturb cardiac innervation, which eventually brings about exhaustion and nutritional disturbance of the muscle, but eventually they produce arterio-sclerosis, with its manifold results throughout the whole organism. Lithemia, syphilis, lead, tea and coffee, sexual excesses and overwork in any direction may also be factors in the etiology.

Pathologically, the earliest stage is probably one of muscular hypertrophy, with the exception of certain cases in which there is fatty degeneration from the beginning. This muscular hypertrophy is later followed by degeneration and connective tissue proliferation.

The symptoms of cardiac myopathy are often rather vague and indefinite, and are observed, in other conditions, as neurasthenia and various gastric disturbances, consisting, in the earlier stages, in overaction, spasmodic and irritable in character, followed by defective and irregular action. Dyspnea, vertigo, tinnitus aurum, injection of the mucous membranes and oedema are some of the indications of impaired circulation. The patient may also complain of pains in the head, neck and precordial region; digestive disturbances, drowsiness, undue fatigue, irritability of temper, palpitation and periods of slow and feeble pulse-beat are observed in consequence of this condition.

The pulse in the stage of hypertrophy usually has increased force and tension. Later it becomes weak, irregular and intermittent.

An important but not pathognomonic sign of this condition is the "costal fringe." This term is applied to a fine network of blood-vessels following the border of the costal arch, and is usually associated with slight permanent enlargement of the liver.

Physical examination reveals that with the progress of the disease there is a gradual increase of the area of cardiac dullness laterally in both directions, with displacement of the apex downward and to the left, with increasing feebleness and perhaps disappearance of the apex-impact, or weakness and diffusion of the wave.

An impurity rather than a definite murmur of the systolic sound occurs early, or an approximation of the first to the second sound. The second sound may be relatively or actually accentuated. Later the sounds become empty or muffled. Duplication, gallop rhythm, intermittence or asystole may occur. Murmurs sometimes are heard, due more often to muscular insufficiency than to valvular disease.

As to treatment, first remove or mitigate the exciting cause. Reduction of mental and physical exertion is usually desirable. Nitroglycerine is often useful by reducing resistance, as little as gr. 1/400 twice a day often sufficing. Of heart tonics, strychnine is the most generally useful. Drugs of the digitalis series may also be used to advantage in the stage of weakness. General tonics are to be given when indicated, and mercury and the iodides in syphilitic cases. Where a gouty complication exists, strontium salts are useful. Strontium lactate is an excellent diuretic. In acute conditions of cardiac incompetence, venesection is usually indicated, a sufficient amount of blood being drawn to afford relief.

HOGG.

PEDIATRICS.

Cough in Influenza Simulating Whooping-Cough,

Forchheimer (*Arch. Pediatrics*, November, 1900) rejects the names of pseudo-pertussis and pertussoid which have been applied to coughs simulating true pertussis. This peculiar cough had been described by Short as early as 1510.

The peculiarities of the cough are as follows. It always moved in epidemics; it was decidedly contagious. All members of a family are attacked, even those who previously had true pertussis. It commences with fever and catarrhal symptoms if influenza; the whoop is not so characteristic; the peculiar bluish color of the mouth and lips are absent; but the ulcer of the frenulum is present.

The differential diagnosis is very difficult. The history of the case and the fact that adults who have had whooping-cough contract the disease aid in diagnosis. The best treatment is quinine in full doses.

Malarial Coma In Children.

Acker (*Arch. Ped.*, Nov., 1900) reports two cases of malarial coma. The patients were a male, colored, aged eleven years, and a female, colored, aged eight years. Lumbar puncture was done on the first but no fluid withdrawn. Urine normal; but blood examination revealed a large number of estivo-autumnal parasites. The patient recovered in a few days after large doses of quinine.

In the second case the fever ran a prolonged intermittent course. Estivo-autumnal parasites were found in the blood. Evidence of nephritis was distinct. In spite of large doses of quinine the fever persisted for nearly two months. The first part of this fever was evidently due to a malarial infection, but the relapse and long course of the fever was typhoid.

The Abortive Treatment of Pneumonia.

Illoway (*Ped.*, Dec. 15, 1900) asks the question if pneumonia can be aborted in the infant or child. He is rather inclined to answer the question in the affirmative. He reports several cases of croupous pneumonia and broncho-pneumonia, most of which ran a very short course.

The prescription upon which he relies to abort pneumonia is as follows for a child eleven years old:

R̄ Tinct. Verat. Virid. (Norwood's).....gtt. vj
 Tinct. Aconit Rod.....gtt. ij
 Aq. Distill.....
 Syr. Tolutanaa ʒss

M. Sig.: One teaspoonful every half hour until five doses are taken, then teaspoonful every hour.

He reports another case aborted by the infusion of digitalis.

Cereals, Emulsions and Proteids in Infant-Feeding.

Rotch (*N. Y. Medical Journal*, Jan. 26, 1901) thinks that European pediatricists seem to be in great ignorance of the progress made in pediatrics in America, judging from their discussion at the Thirteenth, International Medical Congress.

He objects to the addition of cereals to milk, as nothing is gained thereby. It has no nutritive value, and does not prevent the forma-

tion of large coagula any more than dilution with water. He reports the results of experiments made by Dr. White and Dr. Ladd, who found very little difference. Barley water gives a slightly different coagulum but the difference was not sufficient to make it of any practical value.

The author denies that the emulsions are less perfect in the centrifugal cream. No difference was found in the oil globules of centrifugal cream and gravity cream.

One reason why cows' milk forms large coagula is because the caseinogen is proportionately much greater in quantity than in human milk. According to König, the proportion of whey-proteids to caseinogen in human milk is about two-thirds of the former to one-third of the latter; while in cows' milk it is about one-sixth of the former to five-sixths of the latter.

In order to make this difference less, whey can be used.

Hammerstein's analysis of whey is as follows:

Fat.....	.23 per cent.	Water.....	93.24 per cent.
Milk Sugar.....	47.0 " "	Lactic Acid.....	.33 " "
Whey proteids.....	.85 " "	Salts.....	.65 " "

Whey proteids can be prescribed in the Walker Gordon laboratory by using whey.

The addition of whey diminishes the size of the coagula, and in practice reaps good results.

Any proportion of whey proteid and caseinogen, up to a total of 1.5 per cent., can be prescribed.

[The method of using whey to increase the proteids in milk has been used in St. Louis for two or more years by Dr. Saunders and his pupils, and many prescriptions at the Walker Gordon laboratory will confirm this.]

Some Cases of Tetany in Children.

Morse (*Philadelphia Medical Journal*, January 5, 1901) regards tetany, like epilepsy, merely as a nosological entity, and not a definite disease. The only pathognomonic symptom of tetany is spontaneous, intermittent, paroxysmal muscular contracture. Laryngospasm, Trouseau's symptom, Erb's symptom and the facial phenomena are not pathognomonic of tetany.

The cause varies. Improper hygienic surroundings, rickets, gastro-enteric diseases, acute diseases, and various intoxications are the causes. Some toxic agent increasing the irritability of the nervous system, and, in many cases, causing lesions must be considered the direct cause. He then reports seven cases. In summing up these cases he finds no common etiological factor. Digestive disturbances occurred in all but one. Evidences of rickets were found in three cases. Craniotabes was not present. In two cases the gums were distended with teeth.

The Quantity of Diphtheria Antitoxin Required in the Treatment of Diphtheria.

Park (*Archives of Pediatrics*, November, 1900) made some experiments to determine the most effective dose required in a given case of diphtheria. A series of cases were treated with smaller doses and another series with larger doses than is ordinarily given. Rashes developed in about 20 per cent of all. As a rule, those receiving a full dose recovered more quickly. The author has adopted the following dosage as a result of these experiments:

Very mild cases.....	1000 to 1500 units.
Moderately severe cases.....	2000 to 3000 "
Very severe cases.....	4000 to 5000 "
Laryngeal cases.....	2000 to 5000 "

In infants under one year of age about one-third less can be given. If at the end of eighteen hours there is no subsidence of the faucial inflammation the dose should be repeated.

The Possibility of Eliminating the Deleterious While Retaining the Antitoxic Effects of Antitoxic Sera.

Park (*Archives of Pediatrics*, November, 1900) says that it would be desirable to eliminate the deleterious substances from antitoxic sera. The rashes and joint pains are very annoying to say the least. Recent investigations have connected antitoxins and globulins so closely that we may consider it a probability that the antitoxins are globulins or globulin-like substances. Whatever precipitates globulins precipitates the antitoxin. When all globulins are precipitated all antitoxin is thrown out of solution. A marked ratio always exists between the

amount of globulin and antitoxin. The more antitoxin is found present the greater will be the percentage of globulin. Injections of these precipitated globulins cures diphtheria promptly, but rashes also follow in almost as great a number of cases as when the whole serum is used. At present the best method of eliminating the deleterious substances is in the rejection of the horse whose serum produces rashes. The dry antitoxin is much more liable to be followed by abscess locally.

The Antecedents of Organic Heart Disease.

Packard (*Pediatrics*, October 15, 1900) studied seventy-five histories of children with endocarditis in order to ascertain the antecedent infection in each case. He also analyzed an equal number of control cases with the same infections which had no heart lesions. He concludes that measles, varicella, whooping-cough, and typhoid fever have little or no influence in the production of endocarditis. Many of the cases of heart disease must be attributed to slight infections, such as coryza, various skin diseases, affections of the throat, nose, and gastro-intestinal tract.

ZAHORSKY.

A Protective Union of Doctors.—The *Medical News* is the authority for the statement that the physicians in Lackawanna County Pa., following the example of their brethren in Detroit, are trying to organize a union for mutual protection. They wish to circumvent dead-beats. To compel the expert delinquents to settle up is one of the purposes of organization. Another prominent purpose will be the suppression of quackery. Lay obstetricians who do not fully comply with the requirements of the law will be an especial target for the attacks of the doctors' union. Osteopaths, who are not recognized by the law in Pennsylvania, and who, it is claimed, subject themselves to arrest if they take a fee for their service, will be closely watched. Christian Scientists, Dowieites, and all others who practice faith curing will also be objects of particular solicitude.

BOOK REVIEWS.

A Text-Book of the Practice of Medicine. By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of the Practice of Medicine in the Medico-Chirurgical College, Philadelphia Fourth edition. P.p. 1263. Price: Cloth, \$5.50; Sheep or Half-Morocco, \$6.00. [W. B. Saunders & Co., Philadelphia and London.

The short intervals between the appearance of the different editions of this work are a testimony to the favor with which it has been received by the profession, and also to the evident desire of the author that it shall continue to be a statement of the advance of our knowledge of diseases and their treatment.

It is not to be expected that, in a book of this size, all the diseases commonly understood as belonging to the domain of "internal medicine" can be described as exhaustively as one looks to see done in special treatises. But, by employing concise language, and giving preference to the points of most practical value, Prof. Anders has succeeded in giving a clear, accurate and fairly complete statement of our present knowledge of the diseases usually treated of in works of this character, as well as of a number of rare or recently described conditions which heretofore have not been included.

We can cordially recommend it to anyone desiring a work of this character. HOGÉ.

The American Illustrated Dictionary. By W. A. NEWMAN DORLAND, A.M., M.D. Pp 770. Price, \$4 50; with index, \$5 00. [W. B. Saunders & Co.

A dictionary, if full enough to be satisfactory, is apt to be cumbersome, and, if small enough to be conveniently handled, will probably be found to lack terms whose definition is desired.

In this volume we have a work to which neither objection applies. It contains all the terms likely to be used in treatises on medical and related scientific subjects, with their derivations, definitions, tables of

staining reagents, tests, of the arteries, veins, nerves and muscles, of bacteria, of weights and measures, and numerous illustrations of anatomical, histological and bacteriological subjects.

By employing a flexible leather binding, light paper, and a small though perfectly legible type, the publishers have produced a quite satisfactory dictionary which is at the same time light enough to be conveniently made use of when needed.

HOGUE.

International Clinics. Volume III. Tenth series 1900. Pp. 298. Price: Cloth, \$2.00; Half Leather, \$2.25. [J. B. Lippincott & Co., Philadelphia.

This volume contains a number of valuable and practical clinical lectures on Genito-Urinary Diseases, Therapeutics, General Medicine, Neurology, Surgery, Obstetrics and Gynecology, one on Injuries to the Eyelids and Eyeball, by distinguished American and foreign lecturers. Also exhaustive articles on The Use and Care of the Microscope, and The Scientific Modification of Milk.

HOGUE.

A Text-Book of Bacteriology. By ALFRED STENGLE, M.D., Professor of Clinical Medicine in the University of Pennsylvania, etc. With 372 illustrations. Third edition. Revised. Price: Cloth, \$5.00 net; Half Morocco, \$6.00 net. [Philadelphia and London: W. B. Saunders & Company. 1900.

The favorable reception of previous editions has convinced the author that his primary purpose—namely, to supply a moderate-sized book on Clinical Pathology—has found favor with the profession. Sections on Pathologic Physiology have been amplified and brought up to date. Dr. Joseph Sailer has revised the sections on Neuro-Pathology.

The Etiology of disease is discussed under the headings of Traumatism, Physical Conditions, Poisons, and Vegetable and Animal Parasites. The Disorders of Nutrition and Metabolism are briefly discussed in Chapter II. Acid-intoxication is given an important role in the production of symptoms in such diseases as fever, diabetes, cancer, etc. The theory that alloxin bases cause certain disorders (migraine, etc.) is said to be unproven as yet. Lepine's theory that the absence

of a pancreatic glycolitic ferment is the cause of diabetes is not confirmed.

He gives, as the cause of fever in the great majority of cases, a toxic substance.

Under Retrogressive Processes, atrophy, degeneration and infiltration are discussed. Pigmentation and necrosis are under the same heading. The chapter on inflammation and regeneration is brief but concise and clear. The discussion of tumors occupies about 60 pages. Bacteria and diseases due to bacteria occupies about 90 pages.

Immunity is defined as "that condition of the organism which enables it to resist the attacks of bacteria and their toxic secretions." The most important theories of immunity are given.

Part II. takes up the consideration of Special Pathology. The diseases of the various organs of the body are given. The etiology and morbid anatomy in the light of our present knowledge are briefly described.

We recommend this volume to the student and to the busy practitioner who wishes to read up-to-date pathology in a concise and very practical form.

ZAHORSKY.

The American Text-Book of Physiology. By various authors; Edited by WILLIAM H. HOWELL, Ph.D., M.D. Second edition. Revised. Volume I. Price: \$3.00 net. [Philadelphia: W. B. Saunders & Co. 1900.

The first volume of the second edition of this excellent text-book comes to our table with some changes in statements and a presentation of new facts and new points of view. The total amount of material is about the same as in the first edition, but for convenience of use in the laboratory or study it has been divided into two volumes, the single volume being somewhat too bulky for handling. This part contains the articles on the Blood, on the Lymph, the Circulation, that on Secretion, Digestion and Nutrition, on Respiration and Animal Heat, and on the Chemistry of the Body.

The authors are the very leaders of American physiology, our sometime fellow-townsmen, Dr. W. T. Porter, having contributed parts

of the section on the Circulation, a subject which he has notably enriched by his labors.

On page 35 occurs the statement that "the red corpuscles—in all the mammalia—are without nuclei." This is in accordance with received doctrine, but St. Louis readers will remember that our Dr. Bremer claims to have shown the contrary. His statement that the blood-plates are derived from the nuclei of these cells likewise passes unnoticed. Dr. Howell rather leans (page 49) to the idea that they are "derived from nuclei of the leucocytes"

The much mooted matter of the coagulation of the blood is brought down to its present status. Dr. Howard concludes that "the essential elements of Schmidt's fibrin-ferment is a nucleo proteid compound." This body, nevertheless, cannot act upon fibrinogen until it has combined with the calcium salts of the blood. He leaves the question of the manner of its action on fibrinogen undetermined. On the one hand it is supposed that it causes a hydrolytic cleavage of the fibrinogen molecule; that is, that the latter takes up water and then breaks up into fibrin and fibrin-globulin. Others hold that there occurs a molecular re-arrangement of fibrinogen.

An interesting point is brought out in Dr. Porter's article on the nutrition of the heart, which is, that the coronary arteries are physiologically "terminal;" that is to say, that although certain connecting channels exist between branches of the right and left coronary arteries, yet that normally blood does not flow through these. Injection masses under high pressure may be forced through, and the examination of injected preparations has thus given rise to the mistaken idea that there existed physiological as well as anatomical anastomosis. This subject was well presented two years ago in a paper by Dr. Walter Baumgarten of this city. The importance of the fact thus established has in its permitting the study of regional anemia of coronary areas, experimentally produced by ligature, and of its influence in determining degenerations of the myocardium.

In the section on Digestion is mentioned the recent interesting observation by Dolinsky, that normal secretion by the pancreas is reflexly excited by stomach acting upon the gastric or duodenal mucous membrane. Acids arouse pancreatic flow, while alkalies diminish it.

This piece of information promises to bear therapeutic fruit, while any filling-in of the numerous gaps in our knowledge of pancreatic physiology is most welcome. Oils and water introduced into the stomach stimulate pancreatic flow. It would also seem that there exists a relation between the composition of the food and that of the secretion. Proteid food produces a secretion rich in trypsin, oily food, one containing much fat-splitting enzyme, and so on.

The article on Absorption, and that on the internal secretions, contain many things which we might note had we the space at command.

An interesting point in Dr. Reichart's article on the Respiration concerns the condition of the respiratory center in the fetus. This center remains in a state of apnoea, partly on account of a low irritability and partly on account of the large oxygen capacity of the fetal blood. The percentage of hemoglobin is much higher than in the mother's blood.

The points which we have selected here and there through the volume may serve to give an idea of its contents, like the brick which, the old tale tells us, was once carried around as a sample of a house for sale.

GRINDON.

County Boards of Health.—One of the first acts of the Missouri Legislature was the passage of a bill constituting the county judges, with a physician as consultant, a board of health for that county with full powers to act in all matters relating to the health and welfare of the inhabitant of that county, in so far as it does not conflict with the functions of the State Board of Health. The bill has been signed by the Governor and is now a law.

Medical Society of the Missouri Valley.—The semi-annual meeting of this society will be held in the City of Omaha, on Thursday, March 21. A number of excellent papers have been promised, and indications point to an interesting meeting. This association is in a most prosperous condition, with a membership of over three hundred.

Those desiring to contribute to the program of this meeting should notify the secretary, Dr. Chas. Wood Fassett, St. Joseph, Mo., of their intention at once.

NOTES AND ITEMS.

Reports of Use of Suprarenal Capsule Wanted.—Dr. Samuel Florsheim, of 208 E. 46th St., New York, desires reports of cases in which the suprarenal capsule is given in organic heart disease, noting especially the condition of the heart and pulse, and pulse rate, and the effect on the heart and pulse and pulse rate within ten minutes after administration of the suprarenal powder

A Proposed Marriage Law in Minnesota.—A bill was recently introduced into the legislature of Minnesota which provides that a marriage shall not be allowed between two persons where either one is or has been subject to fits of any kind, insanity or any loathsome disease.

The bill further provides that a certificate of a physician, showing that the applicants are fit to enter the married state, shall accompany all applications for a marriage license.

This act places the age limit for women at 45 years, but no provision is made for men as regards age. The penalty for a violation of the law is a fine of \$1000, or five years in the penitentiary, or both, and applies to the persons who marry as well as to the clergyman or justice performing the ceremony.

The "New York State Journal of Medicine."—The first issue of the *New York State Journal of Medicine* has just come to our desk. It is published monthly by the New York State Medical Association and will take the place of the annual volume of the transactions. It will contain a complete report of the meetings of the Association, with its scientific papers, etc., together with condensed reports of the meetings of the various county and district branch associations; also various items of news and matters of interest to the local profession. It is a neat-appearing twenty-four page journal, containing a number of original articles and much matter of interest to the profession in the State of New York. Its purpose is commendable, and it will have a powerful influence in welding together and unifying the profession of that State, promoting its interests and guarding its welfare.

ST. LOUIS

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ORIGINAL CONTRIBUTIONS.

Results Following the Cure of Chronic Defects
of the Vesical Function.

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*Read at the Ninety-Fifth Annual Meeting of the Medical Society, of the State of
New York, January 29, 1901.*

A BLADDER in a normal condition empties itself freely and completely at the end of each act of urination. There are numerous factors the influence of which serve to cripple that function, and with the long establishment of such crippling certain pathological changes in connection with the urinary tract result. It is the purpose of this article to illustrate the fact that following the surgical removal of such factors a strong natural tendency manifests itself to repair whatever pathological changes may have resulted. Among the factors which so cripple the vesical function may be mentioned stricture of the urethra, chronic contraction of the prostatic fibers encircling the vesical neck, senile prostatic hypertrophy, calculi, and tumors. Vesical tenesmus, stagnation of urine and

urinary infection consequent upon the establishment of these factors, are the direct causes for the resulting pathological changes in connection with the urinary tract. Long continued vesical tenesmus against a slowly increasing obstruction to urination causes hypertrophy in connection with the muscular fibers of the bladder-wall so that in extreme instances the wall becomes somewhat over a half inch in thickness. The walls of such bladders are firm and unyielding, their cavities contracted, and their capacities consequently small. Stagnation of urine causes vesical distention and stretching of the bladder-walls. If the stagnation be acute, consequent on a suddenly developed obstruction to the voidance of urine, overstretching and thinning of the bladder-walls, even to the point of rupture, may ensue. A greatly overstretched bladder loses its contractile power and is spoken of as atonic. Generally the factor which cripples the vesical function is of slow development. In such instances the gradual increase of vesical muscular hyperplasia for a considerable time compensates for the increasing obstruction. Eventually, however, the obstruction begins to become greater than the increased strength of the bladder can overcome and dilation of the cavity and stretching of the walls begin. The interior of such a vesical cavity appears trabeculated and rugous, due to the fact that some of the muscular bands are stronger than others and do not give away and stretch under the intravesical pressure. In extreme instances deep sacculi form, marking vesical areas where there has been great yielding of the fibers, and sometimes the mucous vesical layer is forced through the muscular meshwork, a deep sacculus with a narrow neck appearing, the walls of which are made up only of peritoneum and mucous membrane. The effects of chronic vesical stagnation are confined not alone to the bladder-walls, but also to those of the ureters and the renal pelves. The uretero-vesical valves, which in normal conditions close tightly after urine is rhythmically ejected, become so patulous that in extreme instances the tip of the little finger can pass them without resistance. The whole ureteral caliber in such cases becomes in like manner distended. The natural ureteral resistance to a vesical reflux is consequently removed, the result being the development of an intrapelvic fluid pressure. The

walls of the pelves offer comparatively little resistance to such pressure and the establishment of hydronephrosis ensues. Where hydronephrosis is extensive the stretching process involves the kidney and eventually in a large degree cripples its function.

Vesical infection, the third cause for the resulting pathological changes, adds the inflammatory element to the processes already described. An infective process in this connection manifests itself at first by the development of a cystitis. It is not, however, the inflammation in connection with the vesical walls themselves which is usually of chief importance in this connection, but rather the ascent of the inflammation up the patulous ureters and into the renal pelves. Inflammation in this latter position is of especial danger owing to its tendency to cripple the renal function by a subsequent direct involvement of the secreting tubules.

It stands to reason that the pathological defects which have been enumerated, and especially such of them as are of a severe grade, can not immediately disappear after the removal of the factor which has caused the crippling of the vesical function. Still, if a remedial operation has been thoroughly performed and the after-treatment attended to, the reversion to a normal condition is often effected in a surprisingly short period. It is not within the scope of this paper to discuss operative procedure; still it may be well to emphasize the fact that in operating the surgeon should have in mind not only the removal of the disturbing factor, but also the establishment of vesical rest through artificial drainage until such time as the resulting lesions in connection with the urinary tract have had time to repair. For illustration, a few cases will be recited:

CASE I.—A man, 45 years of age. Had led a very dissipated life for years. For the last ten years had been troubled with urethral stricture. His habit had been to neglect himself till on the verge of vesical retention. He would then submit to having his stricture dilated enough only to tide over the emergency. After at first developing an hypertrophy, the bladder finally became atonic and capable of but partially emptying itself. Its contents also became infected, the infection extending up to and involving both renal pelves. Finally the urine became scant, and besides being charged with albumen, contained many

casts. Symptoms of uremia developed, among them being an attack on one occasion of edema of the glottis, which nearly proved fatal. The physicians in attendance at that time assured the patient that he was in the last stages of chronic Bright's disease and that at best his life would be of but brief duration. Shortly after the subsidence of this edematous attack the case came under my observation. My diagnosis was that the uremia was caused not by a condition of chronic Bright's disease, but by one of bacillary nephritis dependent on an extension to the renal substance of an ascending infection, and I felt that if the infection could be eliminated by the removal of the stricture and the establishment of thorough vesical drainage, combined with free diuresis, the kidneys would then be found to be in a comparatively undamaged condition and capable of performing their function. Although the outcome of an operation seemed, of course, very grave, still there was evidently nothing to be hoped for from palliative measures.

The patient agreed to operation. The stricture was divided and the bladder drained through perineal incision. Alcoholic stimulation was stopped and heavy doses of strychnia substituted; the bowels were purged by calomel administered promptly after the operation. The patient speedily developed a rather severe attack of delirium tremens. His kidneys, however, did not falter, but gradually threw off the infection, as did also the urinary tract, and after a month's rest the bladder, on the healing of the perineal wound, resumed its function, emptying itself completely at the end of each act of micturition. Three months after the operation the urine was found to be sterile, free from albumen and casts, and to contain the normal amount of urea.

CASE II.—A man, 50 years of age. For many years there had been a history of frequent and difficult urination, and for the last few years it had been necessary to wear a rubber urinal, so frequent and spontaneous had the acts become. Retention had never occurred. Examination of the urethra showed the existence of a rigid narrow stricture in the deep portion of the canal. Aside from a small amount of pus and mucus the urine was normal. On making a perineal section, dividing the stricture and entering the bladder, the cavity of the organ was found to be very contracted, its inner surface rugous, and its walls so firm that all attempts failed, even under profound anesthesia, to distend it beyond a capacity of an ounce and a half. Contracted bladder similar to the one discovered might have represented a pathological condition caused by perivesical inflammation—a pericystitis, so called. Such a lesion is permanent and not to be corrected by surgical procedure. The long continuance of tight stricture without the occurrence of retention and the rugous feel presented to intra-

vesical touch made it far more probable, however, that the contraction was due wholly to hyperplasia of the vesical muscular fiber, the increase in the muscular tonicity of the bladder-walls having been able up to that time to fully compensate for the gradually increased resistance to urination offered by the stricture. My prognosis accordingly was that through long-continued vesical rest, to be accomplished by perineal drainage, followed by the establishment of a perfectly pervious urethra, there would gradually be a disappearance, owing to retrograde changes, of the muscular hypertrophy, and such was the outcome of the case. The bladder was drained for a month. Then the perineal tube was removed and at the end of six weeks easy voidance of urine by way of the urethra occurred. The acts, however, were at first frequent, a violent and sudden expulsion occurring as soon as two ounces had collected. The suddenness of the acts made it necessary for a rubber urinal to be worn. After a few months it was found that three ounces could be retained and that the onset of urination was not quite so precipitate. Gradual improvement along these lines continued for about a year, when a capacity of six ounces was attained and the commencement of the act was well under individual control. The case passed out of my observation at that time, although I think it most likely that after a still longer period the capacity of the bladder would have been found to have correspondingly increased.

CASE III.—A man, 70 years of age. Nine years previously, after a gradually increasing frequency and difficulty of urination, retention had occurred. That accident marked the commencement with him of a complete dependence on a catheter for the voidance of urine. For several years after his commencement of catheter life a soft rubber instrument could be passed. Then with the establishment of a chronic vesical infection the deep urethra gradually became so inflamed and spasmodic that the soft rubber instrument would no longer pass, and a stiff gum elastic one had to be substituted. The use of this latter instrument was attended by some traumatism, the result being that eventually every instrumentation became difficult and painful. The urine had for some time been very foul and ammoniacal and vesical tenesmus had developed—symptoms which pointed strongly toward the conclusion that phosphatic stone formation had as a consequence resulted. In fact, the time had been reached when a crisis had occurred, in that the palliative treatment afforded by the use of the catheter no longer availed, and the patient had to either be left to die or resort to a radical surgical procedure. The latter course being accepted, the bladder was opened suprapubically. One phosphatic stone of about one-half ounce in size was found, situated in a post-prostatic

pouch, which had formed under and behind a large intravesical projecting mass of prostatic hypertrophy, and another of somewhat less size lay encysted very firmly in a vesical sacculus—a result of the chronic vesical obstruction. There were, besides a rough network of muscular trabeculæ, several other less extensive vesical sacculi. The mouths of both ureters were very patulous, easily admitting the tip of the little finger. After the removal of the calculi the prostatic obstruction was enucleated according to my method and thorough drainage established, thus insuring perfect vesical rest for the succeeding month and a half. At the end of that time the bladder successfully resumed its normal function. At first the stream on urination was without great force, but by the end of six months the act had become free and natural, and intravesical inspection through the aid of a cystoscope showed an almost complete disappearance of the pathological vesical features already described. Had a similar intravesical inspection been made at the end of a year, I feel sure it would have been found that all pathological vesical changes had disappeared.

[252 LEXINGTON AVENUE.]

Some Recent Researches in Rheumatic Fever, With Remarks on Internal Antisepsis.

By L. T. RIESMEYER, M.D.,

ST. LOUIS, MO.

ANALOGY as well as clinical evidence speak so strongly in favor of the theory that acute articular rheumatism is an infectious disease, that even without bacteriological proof it has been transferred more than fifteen years ago from the class of constitutional to that of infectious diseases.

For the sake of clearness it should be stated in the beginning that wherever the word rheumatism is used in this article it has reference only to rheumatic fever and not to such joint affections as gonorrheal arthritis, arthritis deformans, gouty arthritis, pernicious arthritis, etc.; the designation "exciting cause" is employed only in the sense of an infection with a specific microbe; predisposing elements—a very important factor in the causation of disease—have not been considered.

To find a specific germ in rheumatic fever and prove it to be the exciting cause, has been found to be a most difficult matter. Bacteriologists have examined the blood, joints, urine, cerebro-spinal fluid, lesions of the heart, pleura, pericardium, etc. They have found various bacilli and micrococci; among the latter the staphylococcus albus and aureus. The observations of Sahli,¹ made in 1892, attracted much attention. He found the staphylococcus citreus in the synovial membrane, pericardial exudate, endocardial vegetations, blood, and bronchial glands. Sahli, therefore, proposed to call rheumatism a staphylococcus disease. Stewart and others had expressed the same view some ten years before; Stewart, in fact, as early as 1881. Riva, in 1897, succeeded in obtaining growths of a polymorphous, spore-bearing organism by making cultures from the joints, pleural fluid, and the blood of rheumatic patients, using a culture fluid of serum made from horses' joints and synovial fluid. Riva thinks he has found the exciting cause of rheumatism. Lucatello found an anaerobic bacillus in 1892. In 1895, Newsholme² demonstrated the epidemicity of acute rheumatism and came to the conclusion that the exciting cause must be an organism which spends one period of its existence as a saprophyte in the soil and another period as a parasite in man—a very alluring hypothesis, indeed. Since 1896 there have been numerous workers in this field of research, and their results have become more and more in harmony with each other, and Achalme's investigations in 1897, have met with the most support, and have been corroborated by several workers on the subject. Before entering into Achalme's labors a very recent research must not be omitted in this report—a research which, if it should be sufficiently corroborated, would bid fair to prove beyond a doubt that at least *one* organism has been positively demonstrated as *one* exciting cause of acute rheumatism. The writer has reference to the investigations of Poynton and Paine,³ who demonstrated minute diplococci in eight successive cases, in five of which they were present in pure culture. The organisms were obtained from the blood of living patients suffering from acute rheumatic pericarditis; also from pericardial fluid, from the fragments of granulations removed from the valves after death, and from the throat and

tonsils of the living patient suffering from rheumatic tonsillitis. Cultures of the organisms thus obtained were made in an acid medium and also upon blood-agar, and upon pericardial fluid which was acid. The organisms were also found in the characteristic nodules of rheumatism. When they were intravenously injected into rabbits they were found in the cardiac valves, pericardium, joint exudation, kidneys, liver, connective tissue, lungs, pleura, and spinal fluid of the animals. They produce in rabbits polyarthritis, bursitis, tendo-vaginitis, also multiple valvulitis and pericarditis (both non-suppurative), and coagulation necrosis in kidneys and liver; acid urine, loaded with urates. The injected animals suffered from only a slight pyrexia. The organisms grow both aerobically and anaerobically. In smear-preparations they may give the impression of streptococci. Before an opinion can be expressed regarding the etiologic importance of Poynton-Paine's diplococcus the result of these investigations needs to be fully corroborated in contradistinction to the researches concerning Achalme's bacillus which have passed the stage of doubt and uncertainty.

In 1897, Achalme,[†] examining the heart-blood and the cerebro-spinal fluid in two cases of undoubted acute rheumatism as soon as possible after death, obtained in each instance enormous numbers—a pure culture—of a bacillus similar in appearance to that of anthrax and identical with a bacillus which he had obtained six years before. In six living patients he examined the blood and found pure cultures of the same bacillus, which is an anaerobic microbe, in four. In the other two the bacilli were associated with micrococci. In experimenting with the bacillus he noticed a number of phenomena which are suggestive from a clinical point of view. He found, for instance, that the bacillus grows more abundantly in the urine of arthritics than in that of other persons. Growth in sterilized urine threw down a copious precipitate of urates. He noticed also the marked sour smell given off by the cultures, and which was due to the formation of lactic, acetic, butyric and propionic acids. Injections into guinea-pigs causes death in from twenty to thirty-six hours, and sometimes endocarditis. The serous fluids of such animals contain frequently, besides the injected bacillus, cocci, especially streptococci.

Triboulet and Coyon found Achalme's bacillus alone in two cases of severe acute rheumatism, but in milder cases it was generally associated with a diplococcus. Achalme as well as other observers have found various cocci in patients suffering from acute rheumatism (it is of interest to note that the diplococcus of Poynton and Paine resembles streptococci in smear-preparations and staphylococci in its growth upon blood-agar), and with regard to the presence of other microbes than his bacillus Achalme infers that his bacillus makes its appearance first in pure culture, but opens the door to the microbes of secondary infection which may persist alone at the decline of the disease, and that this would explain the numerous cases in which they have appeared to be pathogenic agents of rheumatism. This view would certainly harmonize with the fact alluded to by Wohlmann,⁵ that pernicious arthritis and gonorrheal rheumatism are especially prone to occur in rheumatic subjects. Achalme's researches have been confirmed by Carriere, Southenko and de Bethencourt. Since then Achalme claims to have found additional evidence that his bacillus is in all probability the specific cause of acute rheumatism. In 1899, Westphal, Wassermann and Malkoff⁶ isolated a diplococcus which produced on intravenous injection a polyarthritis—the results obtained were constant in a series of eighty rabbits and point toward the probability that the diplococcus is identical with the diplococcus of Poynton and Paine.

Achalme's theory, that one specific microbe prepares the soil for additional infections, seems to have much to recommend it. An analogous condition prevails in epidemic cerebrospinal meningitis, in which the specific exciting cause—the diplococcus intracellulare meningitidis—is found in a pure culture only in the beginning of the disease, while later on other microbes seem to take its place, showing that it is not always possible to demonstrate the exciting cause—the specific microbe—of a disease in each individual patient, a fact which must be mentioned in this connection, because the reluctance of definitely accepting Achalme's bacillus as the specific microbe of acute rheumatism is due to the circumstance that it is not found in every case of the disease. Koch's postulate, that in order to prove the specific nature of a microbe it is necessary

to produce the respective disease by the animal experiment, has been abolished, in a measure, by Koch himself for the very pertinent reason that in animals there is, in some instances, an absolute absence of susceptibility to an infection with microbes that are pathogenic in man.

The difficulty in proving a certain microbe to be the specific cause of acute articular rheumatism may also be due to the possibility that the disease is not a nosological entity, but that it may consist of a series of symptomatologically identical but etiologically different diseases—a series of diseases, in other words, which may have to be differentiated according to their specific pathogenic organisms in a similar manner as croupous pneumonia, for instance, is now etiologically subdivided into a number of different affections according to their specific exciting causes. A similar condition prevails, *mutatis mutandis* of course, in puerperal fever. And as pseudomembranes are formed in the throat as a result of various infections that have nothing in common with diphtheria—membranes that cannot be anatomically differentiated from the membrane resulting from the diphtheritic necrosis of true diphtheria, so may the inflamed joints of rheumatic fever perhaps be due to more than one kind of infection.

An important clinical fact, however, that would appear to speak greatly in favor of the hypothesis that the exciting cause of acute rheumatism is one specific microbe which prepares the soil for other bacterial life, is the pronounced specific action of salicylic acid and its compounds in the disease. With regard to this phenomenon it is an interesting coincidence that, according to Achalmé, two minims of one per cent. aqueous solution of salicylate of sodium stops all growth in a culture of his bacillus—a smaller quantity than is required for most other pathogenic germs. This behavior of Achalmé's bacillus reminds one of the ever-recurring phenomenon that empirical medicine is the forerunner of scientifically established facts. For, if there is a specific in any disease, it is salicylic acid and its compounds in rheumatism. It is, moreover, of interest with regard to this phenomenon to note that when in 1860 salicylic acid was first produced from coal-tar, an extract of the willow tree had been in use in England for almost a century for the

treatment of rheumatism. In an analogous manner has empiricism preceded science in the therapeutic use of quinine and mercury—drugs which are recognized as true specifics in malaria and syphilis in the same degree as salicylic acid in rheumatism. It is probably in a large measure due to the specific effectiveness of these three drugs that the idea of internal antisepsis has in recent years received a new impetus. That there cannot be such a thing as internal antisepsis in a sense that the respective drug destroys the specific organism of a disease is, of course, plain; for in such concentration the drug would greatly damage, if not kill, the individual. But the sense in which the word is used in the most recent years is a very broad one. Under internal antisepsis in this wide application of the word is understood, for instance, even the action of quinine upon Laveran's plasmodium in the blood, or, in a still broader sense, the action of a cathartic for the purpose of disinfecting the bowel by diminishing the number of microbes in a most effective manner. Just how such drugs as quinine, mercury, or salicylic acid act as bactericidal agents when administered internally is still a matter of speculation. The great dilution which they undergo in the circulating fluids of the body, the blood, and the lymph, would preclude the idea that they may destroy bacterial growth by inhibition alone, without the additional action of some other agent, such as the alexins, for instance. It may be that in the future some intricate mechanism like that suggested by the beautiful lateral chain hypothesis of Ehrlich in explanation of the action of antitoxins and anticorps will aid in making this process intelligible. Until then may the idea suffice that drugs with such a decidedly specific action in certain infectious diseases like the above-named true specifics act by inhibiting specific bacterial growth with the aid of the natural resisting power of the tissues and fluids of the body against pathogenic germs and their toxins.

In connection with the discussion of internal antisepsis it has been claimed that the principal therapeutic effort in the future must be directed toward finding an internal specific against each individual pathogenic microbe.⁷ Until this idea in therapeutics can be attained, however, practitioners have to

depend upon empiricism which is usually the forerunner of more exact science in medicine. They will have to rely upon the more indirect action of such drugs as according to experience accomplish certain results. As instances of internal antiseptics in this latter sense, one is reminded of drugs like chlorine (which, before the employment of diphtheria antitoxin, had a considerable reputation as an internal remedy in diphtheria); of sulphur compounds in furunculosis; of the allotropic forms of formaldehyde and silver (soluble silver) as more or less general internal antiseptics, with no specific action; of guaiacol carbonate and creosote carbonate in reducing the number of tubercle bacilli in tuberculosis of the lungs (possibly by augmenting the general state of nutrition), and in disinfecting (in a degree) the intestinal tract. The popularity of a milk diet in typhoid fever is undoubtedly due to the practical results obtained by its use in that disease, and it is not impossible that these results are in a measure due to the fact that with a milk diet, as experiments show, the smallest number of microbes seem to find their existence in the intestinal tract—a smaller number than with any other system of feeding. In this sense, then, milk would act as a bowel disinfectant, and indirectly as an internal antiseptic in preventing the absorption of an undue quantity of toxins and ptomaines—the products of bacterial life—from the intestinal tract by lessening the number of microbes. Such an excessive absorption of the poisonous products of bacterial life, which in the healthy individual cannot take place according to experimental research, may produce in predisposed individuals, *e. g.*, neurasthenics, more or less distressing symptoms including all kinds of painful sensations. One of the most recent views regarding the production of some of the painful affections and other distressing symptoms of neurasthenia is, that in addition to a faulty digestion—the result of a functional disturbance of the secretory nerves by which bacterial life is enhanced—there is an absence of normal resisting power in the tissues of the digestive tract, a disturbance of the mechanism by which poisonous products of bacterial life are made innocuous—a leakage, if the expression is permissible, by which toxic agents may enter the circulation and thus be carried to the nervous system. Under such conditions the tis-

sues of the body are in a weakened condition, they are no longer immune against the deleterious action of toxic products in an analogous manner as the poisonous materials—the leucomains—which result in the normal or disturbed metabolic processes of the human organism are made insufficiently innocuous by either the specific parenchyma of the liver, or, forsooth, by the absence of a normal condition of immunity of the tissues, an absence, possibly, of an antitoxic action—a weakened power of resistance. This theory—the writer may be allowed to parenthetically observe—makes clear the great importance of strengthening the natural resisting power of the tissues by a natural, *i. e.*, physiological method of living. The happy effect obtained by the salicylic acid compound salophen in a large variety of painful affections, *e. g.*, those observed in some of the forms of neurasthenia and in neuralgia, its popularity and in some cases seemingly specific action in the commencement of influenza (grip), especially where there is cephalalgia and high fever, its soothing, sleep-producing and analgesic effect in the restlessness and sleeplessness of typhoid fever (where the use of baths is for some reason or other impracticable)—these well known effects would seem to be not solely due to its analgesic and antipyretic qualities, but would speak, in a measure, for its action as an internal antiseptic. In all cases in which salicylic acid is indicated in moderate doses (for only ninety grains of salophen are absorbed in twenty-four hours) or where at the same time pain is to be relieved, this chemical compound of salicylic acid appears to be the remedy par excellence. The salicylates have the disadvantage of greatly disturbing the digestion; their administration is, as a rule, accompanied, as every practitioner has had occasion to observe, by a heavily coated tongue and loss of appetite, and sometimes nausea and vomiting. The absence of digestive disturbances upon the administration of salophen (as compared with the salicylates) the writer had often occasion to observe. For instance, in cases of subacute rheumatic fever, where this drug appears to have a most pronounced specific effect, the previously heavily coated tongue soon became clean, the appetite returned, the turbid expression of the eyes became clear, and the face presented the bright aspect of convalescence.

The pain was relieved almost immediately and the other inflammatory joint symptoms began to disappear twenty-four hours after the drug had been taken in its largest effective doses (*i. e.*, ninety grains in twenty-four hours in grown persons). This contrast, as regards the effect upon the digestive tract, between the action of the salicylates and salophen, is said to be due to the fact that in the administration of salophen, salicylic acid is not set free until the drug has passed into the alkaline contents of the bowel.

To disinfect the bowels when the stools are offensive, salophen has justly become a most popular remedy, especially in typhoid fever. By such a disinfection of the intestinal contents toxic products, which might otherwise enter the circulation, may be prevented from doing harm and probably increasing the malaise and restlessness of the patients. Whether in typhoid fever the drug may have some value as an internal antiseptic (after it has passed into the circulation) in the sense of inhibiting bacterial growth in the tissues, must be left to future research.

As in the pre-antitoxic era the bichloride of mercury in minute doses was very popular as an internal antiseptic in diphtheria, so have in recent years attempts been made to abort typhoid fever by the administration of a certain mechanical mixture of antiseptic drugs, and the medical profession has listened to and read some most enthusiastic reports in this direction. It is to be regretted, however, if these favorable reports (some of them, by the way, from very able and trustworthy physicians) are not merely the result of mistaking a *post hoc* for a *propter hoc*, that the exact composition is withheld. True, the ingredients of the mechanical mixture are named, but the quantity of the constituent drugs is not stated, which, for practical purposes, stamps such mixtures as secret remedies, and they are therefore not used by the vast majority of reputable physicians. The *chemical* compounds whose chemical formulæ are not withheld, do not, of course, belong to this objectionable category.

In surgery and sanitary science the word antiseptic has been applied to every chemical bactericidal agent, but in internal medicine its meaning has been extended in a vastly broader

sense. Long before the great impulse, however, which surgery as well as internal medicine have received since the beginning of the Listerian era, was it considered an undisputed fact that there are but three specific remedies, viz., those mentioned above—mercury, quinine, and salicylic acid, and this trinity has not been excelled by any other remedial agent; in fact, it still stands alone as the only true representative of specific remedial agents. It is true that serum-therapy has added one more remedy of unequivocal specific value, namely, diphtheria antitoxin, and may be on the verge of adding some others; but with the increase of light upon this subject the obstacles to and limitations of the production of additional *remedial* (not protective, like *vaccins*) agents in serum-therapy have become plainer in recent years—a subject, however, whose consideration would carry the writer beyond the limits of this paper.

The attention that has been paid to internal antiseptics in recent years will undoubtedly be still further augmented when a specific pathogenic microbe has been unequivocally demonstrated in each infectious disease, as it is now on the verge of being discovered in acute rheumatism. When this shall have been accomplished there may also be some hope of the discovery of additional specific remedies in certain infectious diseases and a more intelligent interpretation of the action of, for instance, such drugs as soluble silver, which in some inflammatory conditions, *e. g.*, phlebitic thrombosis, seems to have a most prompt remedial effect, while in others it happens to be absolutely worthless. In such instances as this it will be necessary to investigate what particular pathogenic microbe (or, per chance, several microbes) is specifically affected by the respective remedy. As a paradigma in this respect the behavior of mercury as an internal antiseptic readily suggests itself. The administration of metallic mercury by means of inunction (which, of course, is tantamount to its internal administration *per os* inasmuch as the remedy enters the circulation) acts not only as a specific in syphilis, but is supposed to have also an effect in a minor degree upon the germs of other infections. After the unequivocal discovery, then, of a specific microbe in a given infectious disease, it may become possible to test the germicidal or antitoxic value of drugs (or sera) with regard to

an infection with one particular pathogenic microbe in contradistinction to their general (*i. e.*, where more than one kind of pathogenic microbe is concerned) bacterial growth inhibiting action.

Judging from analogy, there is good reason to believe that the large flora of bacterial life that may accompany a specific pathogenic microbe in the form of a secondary infection will readily yield in most instances after the specific exciting cause has been made innocuous. The large variety of different microbes that have been found in the septic infection of puerperal fever, in addition to the main exciting cause of the disease—the streptococcus, readily succumb when the streptococcus has been destroyed by the use of an antistreptococcic serum that “by chance” happens to be adjusted to the particular kind of streptococcus to which the infection is due. The streptococcus infection, by the way, furnishes one of many instances of the difficulties that serum-therapy has to overcome, inasmuch as an antistreptococcic serum that does not correspond—is not adjusted—to one particular kind of virulent streptococcus infection, has no effect as far as that one variety of streptococcus infection is concerned. (Hence the wisdom of bacteriologists in using a large variety of virulent streptococcus cultures in the manufacture of sera, in the hope that if the anticorps of one streptococcus does not correspond to the respective infection, the anticorps of another may.) In acute rheumatism, too, it would appear that the flora of bacterial life (strict saprophytes or facultative pathogenic bacteria?) soon yield after the main source of infection—the exciting cause of the disease has been made innocuous by the action of salicylic acid as an internal antiseptic.

The reaction in recent years, in favor of a greater faith in the reality and importance of internal antiseptics, is the natural consequence of the nihilism, in this respect, following the popularization of the germ theory of disease. Let us hope that the pendulum may not now swing too far in the opposite direction.

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[2838 LAFAYETTE AVENUE.]

Cilia in the Anterior Chamber.

(Clinical Demonstration.)

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Read before the Medical Society of City Hospital Alumni, December 20, 1900.

IN injuries to the eyeball with blunt or jagged instruments it sometimes happens that cilia are torn from the lids, carried into the wound and left there. Later on the epithelium about the root of the lash, or the tissue in which the lash is imbedded, may take on activity in the way of form-cysts which may or may not become injurious, this depending upon the size and the location of the new growth. In the cases presented, cilia have been left in the anterior chamber with no apparent offense to the adjacent structures.

The last injury occurred on September 29, 1900, while the patient was attempting to bend a large wire with a pair of flat pliers. The pliers slipped and struck the right eye, cutting into the globe across the lower portion of the cornea a gash nine millimeters long. When first seen, an hour and a half later, the anterior chamber was so filled with blood as to almost obscure the pupil, the wound gaped half a millimeter, and protruding through it was the lower portion of the iris denuded of pigment. This engaged iris was excised as smoothly as possible, the conjunctival sac was irrigated with a $\frac{1}{5000}$ bichloride of mercury solution, an aqueous solution of atropia and cocaine

($\frac{1}{120}$ and $\frac{1}{30}$) was used, and a gauze and absorbent cotton dressing, fixed by collodion, applied. The healing was uneventful, but as the blood cleared from the anterior chamber two cilia were to be seen, one ten millimeters long lying over the upper inner portion of the iris, base outward, and the other five millimeters long, in the lower outer portion with its base behind, or in the corneal wound. Attached to the upper end of this outer one was a bit of pigment, or dirt, which has since spread itself out over the adjoining iris. At present the corneal wound has healed, there is a very good anterior chamber, a large coloboma of the iris downward and inward, a cornea clear except along the track of the wound, and the ophthalmoscope shows a fairly good view of the disc and vessels. In the posterior layers of the lens is a small, nearly central opacity, and floating in the vitreous are numerous shreds which have one end fixed to the lower portion of the lens. The ophthalmometer gives an astigmatism of 8 D. $M^\circ + 10^\circ$; with — 8 D. cyl. axis — 65° V. = $\frac{20}{120}$, the best visual result obtainable.

Since the pupil has recovered from the mydriatic, the upper cilium moves with the movements of the iris. The lower one is fixed, its convexity toward the iris, and its base and point toward the cornea. The globe is very quiet, and so far offers no reason for interference.

The older injury occurred on March 2, 1892. The patient was putting screws into the frame work of a wagon. The screw-driver slipped and went into the left eye. When seen, one and one-half hours later, there was a lacerated three-way perforating wound in the outer portion of the cornea, which extended below quite into the ciliary region. The iris protruded into the wound, and the anterior chamber was completely filled with blood. The conjunctival sac was cleansed with bichloride $\frac{1}{5000}$, the iris excised, atropine used, and the eye bandaged. The healing was favorable, and as the blood cleared two fine cilia in contact, parallel one with the other, were discovered in the anterior chamber, lying horizontally across its center, their bases to the nasal side and in the angle between the iris and the cornea, their apices in the corneal scar, and their convexity toward the cornea.

Six weeks later the globe was entirely quiet and free from

irritation. Below was a large coloboma of the iris; pupil freely responded to light; $V. = \frac{20}{30}$. Across the posterior surface of the lens extending from the injury upward and inward was a fine striated opacity, and another across the lower outer portion. Also there were some fine floating shreds in the vitreous. The fundus was normal and its finest details could be easily seen.

May 27, 1894. O. S. $V. = \frac{20}{60}$, with -1.5 sph. $V. = \frac{20}{30}$. Globe quiet. At the lower border of the roots of the cilia in the anterior chamber was a slight greyish-looking change, seemingly an elevation of the iris tissue and having the appearance of a small pearl-like cyst.

September 18, 1898. In the small cyst were two white reflexes, which probably indicated some calcareous change.

November 4, 1900. Eyes have given no trouble. O. D. $V. = \frac{20}{15}$; O. S. $V. = \frac{20}{60}$, with $+1.5$ cyl. axis hzl. -1 sph. $V. = \frac{20}{38}$; clear view of disc and vessels; no further change in lens, possibly the cyst had increased a very little in size. It was spherical and measured one millimeter in diameter. These are the conditions that exist as you now see the patient.

Nearly eight years have elapsed since the original injury without any material change in the condition of the eye.

In the *Annales d'Oculistique* for September, 1894, Leviste reports a similar injury with the formation of a cyst where the eye was quiet for eleven years. It then began to be troublesome in bright light. This continued for a year, when, on account of pain and irritation, it became necessary to deal with the cyst surgically.

Another case was reported by McGillivray at the Eighth International Ophthalmological Congress, where the lash was introduced just below the center of the cornea, its point upward in the anterior chamber. Eighteen months had elapsed and no cyst had formed. In this case the bulb-end had been destroyed.

The peculiar interest that attaches to the cases is that foreign bodies of this size can remain in the anterior chamber so long without creating any irritation and with no inconvenience to the patient. Their tolerance must be due to the cilia themselves being animal tissue, which becomes softened

in the aqueous, and is thereby rendered inoffensive, provided there is no cystic or other malicious degeneration.

[BEAUMONT STREET AND WASHINGTON AVENUE.]

The Selection and Administration of Anesthetics.

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*Read before the St. Louis Academy of Medical and Surgical Science,
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IN ALL surgical work, the choice of an anesthetic and the method by which the patient may, with least danger be brought under its influence, are questions of paramount importance to the surgeon.

Of the various anesthetics employed, chloroform and ether are the most generally useful; nitrous oxide is safer but is impracticable for prolonged operations.

Innumerable mixtures of anesthetics have been devised in an attempt to eliminate the dangers necessarily attendant upon their use singly. Of these combinations the various mixtures of alcohol, chloroform and ether are probably the best known. In Schleich's solution benzine is used instead of alcohol. Regnauld's Liquid and methylene bichloride are mixtures of chloroform and wood alcohol, while Wachmuth's anesthetic consists of chloroform and turpentine. Chloramyl contains two drams of amyl nitrite to one pound of chloroform. Clinical experience has failed to show that any of these combinations possess the slightest advantage over chloroform, either in safety or ease of administration, and, in case of emergency, they are much more difficult to obtain.

Personally, I have had no experience with the production

of anesthesia by the intraspinal injection of cocaine, but I believe it to be infinitely more dangerous and much less satisfactory than the administration of chloroform, notwithstanding the claims of some of the advocates of the procedure that perfect anesthesia is obtained and that the injection is made easily, painlessly and with perfect safety to the patient. The principal danger attending its use are from cocaine poisoning and sepsis. Cocaine is a notoriously treacherous drug, there being but few physicians who have not seen cases of dangerous collapse attending its use even in the smallest quantities. Injected into the subarachnoid space it is not unreasonable to expect severe toxic manifestations. Sepsis may be due to the use of a dirty needle or syringe, failure to properly cleanse the skin at the site of the puncture, or to an imperfectly sterilized cocaine solution. To these sources of danger may be added hemorrhage into the spinal canal from a divided blood vessel, and laceration of the medullary tissues, while a sudden movement on the part of the patient might easily break the needle. Among the so-called inconveniences already reported as attending this method may be mentioned severe and long-continued headache, excessive nausea and vomiting, chills, fever, extreme weakness, cold sweats, and presentiments of approaching death, while serious respiratory and circulatory disturbances are not at all uncommon.

The position of the anesthetist at an operation is one of considerable responsibility. He it is who carries the patient to the borderland between life and death and holds him there while the surgeon does his work. He must not only thoroughly understand the nature and the normal action of his anesthetic, but he must be able to recognize instantly the first signs of danger and be ready to meet any emergency promptly and effectively. Timidity or rashness are as dangerous in an anesthetist as carelessness or bad judgement. Any of these faults may cause the operator the greatest worry and annoyance. The operation may be constantly interrupted from imperfect anesthesia or the patient may be exposed to the most imminent danger from too profound a narcosis.

To the anesthetist should fall the responsibility of the selection of the anesthetic and the immediate preparation of the

patient. The general rule is that ether shall be given in all cases where the heart is diseased, and chloroform when the heart or kidneys are affected. My practice is to use chloroform in all cases where it is not positively contraindicated, and I believe it to be positively contraindicated only when the patient has a weak, laboring, or dilated heart. It may be used with comparative safety in cases of valvular disease if good compensation is established. When it can be avoided, chloroform should not be used in operations by gaslight, as the vapor coming in contact with the flame is decomposed and hydrochloric acid and chlorine set free.

Before administering an anesthetic certain precautionary measures should be observed. In every case the condition of the heart and lungs should be carefully investigated. The patient should fast not less than six hours before taking either chloroform or ether as the presence of food in the stomach increases the tendency to nausea and vomiting. If vomiting occurs during anesthesia there is always danger that food particles may be drawn into the air-passages and the so-called "aspiration pneumonia" result. In operations involving the abdominal or pelvic cavities it is advisable to empty the bowels thoroughly with either salines or enemata the day before the operation. In very weak or anemic patients I ordinarily give a hypodermatic injection of strychnine, the dose varying from $\frac{1}{30}$ to $\frac{1}{60}$ of a grain; while in very nervous or hysterical patients the hypodermatic administration of $\frac{1}{8}$ of a grain of morphine and $\frac{1}{200}$ of a grain of atropine from fifteen to thirty minutes before the administration of the chloroform will often prove of great value.

The clothing should be as light and loose as possible, as about the neck, throat or abdomen, there must be no constriction which could interfere with respiration. It is even desirable to have the thorax partially uncovered so that the respiratory movements may be watched. All false teeth, plates, tobacco or other foreign bodies should be removed from the mouth; while the eyes should be covered with a damp towel. Many anesthetists anoint the lower part of the face with vaseline, but I have never found such a procedure necessary.

For general use chloroform possesses great advantages

over ether. First, a smaller quantity is required and the patient passes more rapidly and quietly under its influence; second, with chloroform the nausea is seldom as severe as with ether; third, the vapor not being so irritating to the respiratory passages, the excessive secretion of mucus, so annoying in ether narcosis, is rarely present; fourth, with chloroform the anesthesia is unusually quiet and even, and is peculiarly adapted to abdominal and pelvic work.

Only such chloroform as is known to be absolutely pure should be used. Impure chloroform may be dangerous on account of the presence of various methyl compounds, formed during its manufacture, and to various decomposition products, as free chlorine and hydrochloric acid, resulting from exposure to light and air. Pure chloroform poured on clean white filter paper and allowed to evaporate leaves no odor.

Immediately before the administration of the chloroform, its nature and action should be explained to the patient. He should be told that the chloroform may choke him a little at first, that he may hear strange sounds, or have sensations of falling, but that this will last only a few moments, then he will become drowsy and soon fall asleep.

The room should be as quiet as possible; the rattling of instruments and trays, and the talking incident to the preparation for the operation will often greatly excite a nervous patient and materially retard the progress of the anesthesia. In hospital practice I have found it much better to anesthetize women in their own rooms before taking them into the operating room. Talking to them and quieting their fears as they are taking the anesthetic will often prevent any struggling or excitement. At the beginning of an anesthesia many patients seem especially susceptible to the power of suggestion and may be controlled thereby to a great extent.

Chloroform is best administered with an Esmarch mask and by the drop method. A few drops are poured on the mask which should be held a short distance from the face till the patient becomes accustomed to the vapor; then it should be brought closer and the chloroform dropped on slowly and continuously. By this method anesthesia is produced with the least possible amount of chloroform and a minimum degree

of danger to the patient. It requires more chloroform to produce anesthesia when the patient is near an open window or in the Trendelenburg position. An alcoholic always takes chloroform badly and usually requires an immense amount to produce anesthesia. In one case I gave five ounces of chloroform before the patient showed the first signs of relaxation and three ounces more before the operation, which lasted twenty-five minutes, was completed. I have kept a girl anesthetized for thirty minutes, for an oophorectomy, with three drams of chloroform.

Choking, coughing or swallowing during the early stage of anesthesia mean that the patient is receiving too much chloroform and that the mask should be either momentarily withdrawn or more air admitted. Under no circumstance should chloroform anesthesia be hurried, neither should the patient be exhorted to "breathe deep." This exhortation is a confession, on the part of the one using it, of ignorance of or lack of experience in the use of anesthetics.

While in some cases the patient goes to sleep quietly under the influence of the anesthetic, there is ordinarily a well-marked stage of excitement, during which the he struggles, throws his legs and arms about, shouts, sings, laughs or cries. Gradually the struggles become less violent, the loud cry becomes a confused, incoherent mumbling; the respiration becomes slow and regular, the pupils become contracted and irresponsive to light, the conjunctival reflex is abolished; the muscles relax and the patient is ready for the surgeon.

If, during the narcosis, the patient vomits the anesthetic should be stopped, the patient's face and shoulders turned to one side and the jaw drawn forward. When the patient becomes quiet the anesthetic may be resumed.

Respiratory disturbances are common, but, as a rule, not dangerous. Mucus may accumulate in the air passages, causing a temporary stoppage of respiration, or the tongue may fall back against the posterior pharyngeal wall, closing the larynx by pushing down the epiglottis; when this happens the difficulty, ordinarily, may be corrected by drawing forward the lower jaw, at the same time extending the head; the use of much force is rarely either necessary or justifiable. In some

cases it is necessary to open the jaws and draw the tongue forward with forceps; but an instrument that will lacerate the tongue should never be used for this purpose.

Cardiac disturbances are always exceedingly dangerous; while the force and frequency of the pulse is normally diminished during complete narcosis, any disturbance of the cardiac-rhythm is a sign of threatened collapse. In chloroform syncope the face becomes waxy white, the pupils widely dilated and irresponsive to light, the pulse imperceptible and the heart sounds almost inaudible; respiration stops, the arterial blood becomes dark and hemorrhage suddenly ceases. At the first sign of collapse the chloroform should be stopped, the head lowered and the body raised; this procedure not only allows the blood to gravitate to the heart and head but it also rapidly empties the lungs of chloroform vapor. If the patient does not immediately revive, artificial respiration must be employed, as it is possible by this means to keep up a very feeble circulation even after the heart has stopped beating, the inspiratory movements apparently aspirating the blood into the right auricle.

In ether narcosis only the best quality of sulphuric ether should be employed. It is best administered with a cone made of stiff paper and covered with a towel; in the apex of the cone is placed a piece of gauze or cotton and upon this the ether is poured, one or two drams at a time. The administration should begin gradually, the cone being held a short distance from the face, until the patient becomes accustomed to the vapor; then, as tolerance is established, the cone should be pressed close to the face, the air shut out as much as possible and the concentrated vapor administered.

As the patient passes under the influence of the anesthetic the face and neck become deeply congested and the strength and frequency of the heart-beat is increased. In the early stages of the narcosis there is a transitory period of insensibility and relaxation lasting from one to three minutes; this is immediately followed by a stage of active delirium which may last from ten to twenty minutes, then gradually passes into a stage of profound narcosis.

Owing to the irritating effect of the ether on the respira-

tory mucous membrane, there is commonly present an excessive secretion of mucus which, accumulating in the air-passages, may cause considerable trouble and annoyance by its mechanical interference with respiration; cardiac disturbances are quite rare; nausea and vomiting are usually present and are best combatted by increasing the amount of the anesthetic.

With regard to the comparative dangers of chloroform and ether there are great differences of opinion. The mortality rates as given in the current literature on the subject varying from one death in twenty-six to one death in three thousand chloroform anesthetics, and from one death in eight hundred to one death in twelve thousand ether anesthetics. The ordinarily accepted statistics are, approximately, one in fifteen hundred for chloroform, and one in five thousand for ether. I believe the danger from chloroform to be greatly exaggerated and that from ether to be correspondingly minimized, and that the greater safety from ether is more apparent than real; the cause of the current misapprehension being found in the different effects of the two anesthetics. When a patient dies from chloroform the cause of death is only too plain. Ether may kill suddenly from respiratory paralysis, but ordinarily death does not occur immediately, but at a greater or less period of time after the effects of the anesthetic have apparently worn off, when the fatal result is attributed to other causes—as shock, pneumonia or nephritis.

[3965 CLEVELAND AVENUE.]

School Board Opinions of the Rainy Day Skirt.—In El Paso, Texas, according to the *Philadelphia Medical Journal*, the School Board requires the teachers to wear short skirts, since the long ones are supposed to gather up all the germs from the sidewalk and thus endanger the health of the children. In St. Louis the wearing of short skirts by female teachers is prohibited by the School Board on the ground of immodesty.

Report of a Case of Articular Rheumatism with Fatal Heart Complications in a Child.

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Read before the Medical Society of City Hospital Alumni, January 17, 1901.

WHILE to-day the nervous system is claiming the attention of physicians more than ever before, and perhaps more than any of the other various systems of the human body, we are none the less excused from treatment and investigation of other organs, and almost daily do we come upon interesting, if not, indeed, almost surprising cases.

The circulatory system, I believe, furnishes as many such cases as any other. Barring one case, which came under my observation in the City Hospital, I believe the following one is the most interesting that it has been my fortune or misfortune to treat:

Lester S., eight years of age, slender build, but strong and healthy up to March, 1899, when his present trouble began; his home, while humble, has been fairly comfortable; he ate regularly and of wholesome food, though rarely of the dainties or so-called luxuries of the table; no bad habits, but was an obedient child and having no arduous work to perform. He lived in the country and attended school but little; was of a very playful disposition. Parents are of German nativity and are strong and healthy, the father frequently becomes intoxicated and uses tobacco, both of which habits he has had for years; the mother frequently suffers with gall stone colic, otherwise enjoys excellent health. No history of hereditary disease in either parents' family; none of sudden death; all enjoying good health at the present writing. Patient has one sister and three brothers, all in good health. On March 21, 1899, he played in the snow all day, running a great deal and became completely tired out at night. On the next day (22nd), which was his eighth birthday, he felt languid, did not care to go out with the other children to play, but preferred to lie down most of the time and ate but little. The following day he complained of soreness about his knees and pain upon motion. His mother gave

him a tablespoonful of castor oil and swathed his joints in flannel; he experienced no relief, but steadily grew worse; was able to eat or sleep but little; the pain became excessive and patient very weak.

One week from the time he was taken I was called. I found my little patient suffering very much; was quite anemic and thin in flesh; appetite *nil*; slight fever; pulse frequent and small; the joints of hands, wrists, elbows, feet, ankles and knees were swollen, red, hot, and very painful to the patient. Examination of the heart showed apex beat in fifth intercostal space and about an inch to the right of papillary line; no epigastric pulsations noted; chest regular and well formed; size of heart apparently normal. Auscultation revealed a distinct endocardial murmur, but no lesion of the valves detected. Patient complained of his heart fluttering at times. He was placed on five-grain doses of sodium salicylate, four times daily, also small doses of tincture of digitalis. In two days I again saw him; found his joints less feverish and painful; also redness and swelling had largely subsided, though the muffled heart murmur was more pronounced. I informed the father of the child's condition and the probable termination in a severe heart disease. The kidneys were not acting freely and were stimulated with diuretics; urine normal in constituency but rather highly acid.

I saw the patient no more for three weeks, at which time I was called to see the daughter, who had pneumonia, and while there examined the boy, who had complained of some pains about the joints, also in the region of the heart. He was still quite anemic, appetite and bowels irregular. Patient lay down most of the time. Examination of the heart revealed an enlarged area of dullness; apex beat near the nipple line, and a distinct systolic murmur heard at the apex, in the axilla, and in the back; pulse was that of mitral regurgitation. He was again put on sodium salicylate and tincture of digitalis. About four weeks later I was asked to go to see the patient, who the father said was suffering greatly, and that something was wrong with his ribs; he thought they must be broken. I found him breathing rather shallow, about 43 per minute; pulse very small, regular, 108 per minute. Patient retained upright position; epigastric pulsations were marked. The fourth and fifth ribs bulged very greatly, making a marked angle midway between sternum and papillary line. Apex beat somewhat diffused and one-half inch outside nipple line. Dullness extended three inches to the right of median line, which was near the mammary line and to the left of the left mammary line. Strychnia and digitalis were given, with a fatal prognosis, which caused the mother to take the child to another physician for examination. He confirmed my

prognosis and diagnosis, which brought them back to me. I lost sight of the case for about two months, at which time they came to me and the following condition presented:

Patient weak and anemic; respiration shallow, 60 per minute; pulse small, 120 per minute; epigastric pulsations marked; heart's action violent, murmur heard anywhere on the thorax or on following the abdominal aorta; ribs perhaps not bulged so much as on last examination, and heart not quite so large. still was twice its normal size; liver and spleen seemed to be normal in size and not tender. He complained of being unable to rest except with his head on a level with the body. Face would be very much swollen in the morning; feet and legs swollen at night, for he would not remain in bed. No edema of the lungs present. Heavy dosage of *nux vomica* and *digitalis* gave some relief for a short while. I did not see the patient after this, as he lived in the country, but learned that he died in a couple of weeks. No post-mortem made.

The interesting points as I see them in this case are: The rapid fatal course of the disease and the age of the individual; the abatement of the joint symptoms upon administration of salicylates, but the steady and rapid progress of heart complication, which was directly traceable to rheumatism.

While youth is the fruitful age for fatal heart complications, there are few recorded so young as this individual. It is one of the trying times when a physician sees the rapid progress of a disease and must realize the inefficiency of his efforts and the shortcomings of drugs.

While this case, as has many another, proved fatal, I believe it was because I did not have opportunity to treat him because of his living in the country several miles from me, and his home surroundings were not what they should have been, and, too, the first medical attention was one week from the beginning of the disease, at which time the endocardium was markedly involved. It is my belief that had the patient had prompt medical aid and proper home care the result would have been different.

Another point I would mention is, when lack of heart compensation first showed, the patient could not be induced to lie down, preferring the upright posture, while later, when it became more marked, the recumbent position was taken. Of

course, in this position the tax upon the heart is less than in the upright and it can still perform its task, while in the upright it could not. Strange enough, the upright position is always taken when the heart begins to fail in its task, and often persisted in to the end, and often permitted or even told to sit up by the unthinking physician or less thoughtful nurse.

It is not mine to say whether this condition is a complication, sequel, or a part of the disease, there being reasons plentiful for naming it either of the three. Sibson's observation of 325 cases of rheumatism found 63 which he termed "threatened endocarditis, 13 probable, 107 endocarditis without pericarditis, 54 endopericarditis, 6 pericarditis without endocarditis, 3 pericarditis with probable endocarditis. In children 60 to 80 per cent. of rheumatism have endocarditis accompanying it. Some observers or writers state that it is most apt to accompany rheumatism during the first attack, but probably the majority say that subsequent attacks make the liability to endocarditis much greater. Certainly there is great reason to believe the latter to be true. Endocarditis may accompany mild attacks of rheumatism or severe; it may occur one week after the rheumatism begins or after the rheumatism has subsided, and it has been noticed several days before symptoms of rheumatism presented. Acute polyarthritis is the disease which would be most apt to have endocarditis accompany it. The first valves affected are the mitral, less frequently the aortic. Rarely the right side is affected. The pathogenesis, or what we may call meta-arthritic endocarditis, can not be determined so long as our views on rheumatism are so indefinite as at present.

It is claimed by some that the same organism causing the rheumatism produces the endocarditis acting as a joint, becoming infected by the same organism and responding in a similar manner. Others claim that it is due to the toxins in the blood, which, by passing continually over the endocardium, produces an irritation resulting in inflammation. Some observers have found the same organisms in the vegetations on the valves of the heart, which are found in the joints during an attack of rheumatism. Again, many researches have failed to disclose these organisms on the endocardium. We know

that the blood is in an acid state during an attack of rheumatism, and I am inclined to believe that the endocarditis is the result of abnormal conditions of the blood rather than to being produced directly by organisms.

As to treatment, perhaps the theories are as great in number as those concerning etiology. Our offices are filled with samples and the profession flooded with literature; specific after specific appears and in rapid succession each is condemned and relegated to the forgotten and the "What's good for it" still unanswered. First, the patient should be kept in bed and as quiet as possible. The salicylates, preferably sodium salicylate, in large doses, administered. The bowels should be kept fairly open and a bland diet adhered to—milk and cereals, gelatin, etc., restricting the meats entirely. Not until the heart shows signs of weakening in its action do I administer cardiac stimulants. The endocarditis will usually disappear in a week under the use of salicylates with dietetic and rest treatments.

[3151 LACLEDE AVENUE.]

Points of Interest Gathered From Eastern Hospitals.

By FRANK G. NIFONG, M.D.,

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, January 17, 1901.

IT is not my purpose to present a paper or make a co-ordinate address on any particular subject, but simply to call attention to a few points of interest gathered here and there in some of the best metropolitan hospitals. It is always good for us to get away from home for a time and see how our neighbors work. If we should have an hypertrophied self-esteem it may reduce it to the proper size and at the same time fix our confidence in our own ability to do good work. And if we

should have that rarer trouble of underestimating our capacity, it will cure that also. So many various factors are conducive to success and more than we realize is due to our environment. We should measure men, then, not altogether by their achievements, but more by the difficulties which they overcome.

I have recently had the pleasure and the profit that accrues to one from a visit to some of the best Eastern hospitals. I am indebted to Drs. Weir, McCosh, Bull, Coley, Brown, Brewer, Elsborg, Willard, White, Halsted, Kelly and various other gentlemen for courtesy and hospitality. My point of view has been surgical, as you see. The New York hospitals visited have been St. Luke's, St. Vincents', Presbyterian, Roosevelt, New York, Ruptured and Crippled, Mt. Sinai; the Presbyterian, University, and St. Joseph's in Philadelphia, and Johns Hopkins in Baltimore.

I can only speak in a general way of the excellence of these institutions and more specifically of two or three. Why should they not be good when we consider the vast amount of money that is spent in building and maintaining them: St. Luke's, which is said to have cost two and a half million dollars; the Roosevelt with the capital behind it; the Presbyterian with an anonymous donor of four hundred thousand; the New York with large real estate holdings from which comes a princely independent income, and which enables it to build a new three hundred thousand dollar addition; the Mt. Sinai under the patronage of Hebrew wealth will shortly begin the erection of a two million dollar plant; the magnificent St. Vincents' backed by the Catholic Church, and all the various others under the patronage of the different classes of wealth.

After seeing the equally splendid hospitals of Philadelphia and finally the magnificent Johns Hopkins, it is with deep chagrin and shame that a patriotic St. Louisan sees his home hospitals and other eleemosynary institutions. Why can we not have at least one splendid hospital that is fully up to the standard, modern and thoroughly equipped? We, who boast so much of financial solidity, why are we put to shame with our poorly equipped and poorly endowed institutions—our "two-bit" hospitals, and a miserable old barracks for our city hospital? It is one of the duties of the medical profession to

educate its people and endeavor to improve this condition of affairs.

Now let me tell you of some things I saw at the Roosevelt. Roosevelt, you know, is intimately connected with the College of Physicians and Surgeons. Drs. Weir and Bull, with Drs. Brewer and Blake, operate on alternate days in the magnificent Syms' operating amphitheater. I saw them all do good work, usually before a large class of students and visitors. And how splendidly are they equipped and skillfully assisted; dressed in a suit of sterilized pajamas and cap, their hands are scrubbed with sterile soap and water, and rubber gloves are used by operator and all assistants. Dr. Weir did a nephrorrhaphy without gloves, depending on the nascent chlorine method for the hands, but he usually uses gloves. The sponges were gauze rags; a few times I saw sea sponges used. Catgut was prepared by the nurses in the old way of boiling in alcohol, etc. The dressings and instruments were prepared in the usual way. I submit a sample of new starch bandage material, also a beautiful new heavy bleached cheese-cloth bandage material used in the Roosevelt. The surgical service seems very active in the Roosevelt. The electric ambulance is a feature here as it is in most of the hospitals. Each hospital has an ambulance district and answers all calls within the limit. Police and undesirable cases are taken to Bellevue Hospital. There is some arrangement with the city government by which the private hospitals get a certain amount for each charity patient cared for. It seems a very admirable plan for so large a city.

At the Hospital for the Ruptured and Crippled I saw Drs. Bull and Coley operating simultaneously as I had seen them do several years ago—doing the Bassini as they have been doing so well for some years. After operating they showed numerous cases of non-recurrent hernia that had been done from one to ten years previous. Fifteen hundred cases have been operated on by these men.

The New York Hospital has a very active service. I saw work in the service of Dr. Bolton and am indebted to Dr. Nesbitt, house-surgeon, for courtesies. Their old operating rooms are passè, but they will soon be in their magnificent new addi-

tion, which is thirteen stories high and contains splendid rooms. I saw the usual good work here. Being located in central New York, their service is very active and they have much acute surgery—accident cases, etc. Most of the dressing was done in the wards. A new paper bag received old dressing to be carried out. Here I saw Hodgen splints well adjusted, illustrating the Biblical truth, that "A prophet is not without honor save in his own country."

Going still further down the city we come to the splendid St. Vincents' Hospital. Here they have three or four hundred patients all the time and much acute surgery. Located near the Italian and poorer quarters, its ambulance service is very brisk. They had the first auto-ambulance in the city. I had the pleasure of riding on it to an emergency call and it surely was a rough ride, except over the asphaltum streets. St. Vincents' has the usual out-patient department; also equipped with cells and Turkish baths, for drunks, uremics, etc.

There seems to be a rivalry among hospitals as to which shall have the best operating rooms. In my judgment the new rooms at St. Vincents' easily excel all others. The main room is very large, beautifully lighted, ceiling thirty feet high, mosaic floor, and walls white tiled to the ceiling—not marred by amphitheater seats. The anesthetizing, sterilizing and preparation rooms on either side are equally chaste and pretty. This room is the most beautiful I have ever seen and I do not see how it can be excelled.

My admiration of the Presbyterian Hospital may be somewhat exaggerated, but it seems to me—taking it all through—that it is the best of all these splendid institutions. With buildings so complete and beautifully arranged and so thoroughly equipped in every way; with such an excellent surgical staff, and the brightest of nurses, it is what these advantages make it. Through the courtesy of Dr. McCosh and Dr. Mosely, house-surgeon, I was privileged to see much excellent work. Here, also, they have a splendid operating amphitheater and preparation rooms. The hands were prepared by the Weir method, but operator, assistants and nurses all wore rubber gloves. These gloves were sterilized by the wet process and then again by the dry and placed in sterile talcum powder,

which made them very easy to draw on. The gut was prepared in the old way, also the dressings. Sea sponges were used, prepared by the old permanganate and oxalic method. Flat gauze cloths without cotton were used in abdominal operations to retain intestines. The nurses attended with sponges, washing them in sterile water. In order to have the most needed instruments as close to the operator as possible a hospital bed table was used bringing the instruments over any part of the patient. This arrangement I noticed was used by a number of operators at different hospitals, and although apparently a small thing, I was struck with its handiness and the time it saved. It would not be half told of the Presbyterian, if I did not mention the excellent nurses' training school. Here we see the most intelligent and best trained nurses in the country. These bright young women demonstrate the fact that good breeding is of value in any profession and not the least in that of nursing. Nowhere can you see such beautifully kept and orderly wards, such immaculately dressed beds, such perfect notes and records. A man is indeed fortunate who falls under the care of these "ministering angels."

The Mt. Sinai Hospital is old, but very neat and orderly. This has been the home of Gerster for the last twenty-five years, one of the pioneers in practical asepsis, as you know. Now Gerster and Lilienthal are the heads of the two surgical divisions which are always well filled with interesting cases. I saw in the wards two hip disarticulations (Wyeth), five or six appendectomies, several Bassini hernias, tubercular surgical cases, several nephrotomies, proctectomy (Morrison method), colotomy and colostomy, Estlander's operation for empyema, and such like.

I am greatly indebted to Dr. Elsberg of the Mt. Sinai for courteous treatment and information about Mt. Sinai; also for his new method of preparing catgut and sea sponges, which is being used with success now at Mt. Sinai. It appears to be a very rational and withal a simple method. It depends on the chemical principle that a precipitate or resultant salt cannot be redissolved in the substance which precipitates it. Many substances will precipitate albumen and albuminoids and this precipitate cannot be redissolved by an excess of the substance.

Elsberg found by experimentation that ammonium sulphate was the best substance to fix the albumen in the gut. The preparation is simply this: Take crude gut, extract the fat with one part chloroform and two parts ether by macerating twenty-four hours; wind on glass spools tightly in single layer and tie both ends; boil fifteen or twenty minutes in saturated solution of ammonium sulphate; wash off the salt in sterile water after boiling and place in desired media for preservation. The boiling point of saturated ammonium sulphate solution is about 230° F. The gut is wound tightly on the spools to prevent kinking and becoming brittle at these points. For office use one may keep a saturated solution of ammonium sulphate and prepare his gut as needed. Elsberg recommends the addition of two per cent. carbolic acid for office sterilization, For chromicized gut add one per cent. or more of chromic acid to solution. He is experimenting now to determine the length of time the different percentages of chromicized gut will last. To prepare sea sponges he puts them in eight per cent. HCl solution for twenty-four hours to remove dirt and sand and then washes thoroughly; then boil thoroughly in a two per cent. solution of tannic acid and one per cent. of caustic potash. Boil any length of time and wash in sterile water to remove the brown. This method is based on the same principle as that of preparing the gut. The tannic acid fixes the albuminoid principle—spongeine in the sponge, and prevents the boiling from softening and dissolving it. The sponges would become contracted and hard if the potash were not added. The potash prevents that and leaves the sponge as elastic and absorbent as new. In many operations it would seem desirable to go back to the use of sea sponges if we could feel safe about them. I hope this method will prove as satisfactory as it promises.

I did not have the time to see the Philadelphia hospitals as I would liked to have done. The St. Joseph's is a well managed hospital of two hundred beds, out-patient department, training school, and a good pathological laboratory. The Presbyterian is of the pavilion plan and appears neat and well equipped. The University Hospital has good operating rooms and beautiful wards.

Finally, we come to the Johns Hopkins of Baltimore, which is perhaps of more reputation than any. The buildings are magnificent and models of architecture, as you know; and the staff is unexcelled. I think that, perhaps, more original work comes from the Johns Hopkins than any other institution in this country. I can not say much for their operating rooms and amphitheatres, as they are old and out of date, and do not compare in beauty with those of more recently built hospitals. Good surgery is not dependent on the work-room, however, and here we see the best in surgery. I enjoyed the courtesy of Dr. Halsted and saw him do several difficult operations, one of them a cholecystectomy—Dr. Halstead uses silver wire and silk entirely except in operating near the bladder or pelvis of kidney; rubber gloves; nascent chlorine method for hands.

Dr. Mitchell, the house-surgeon, has enjoyed a service of seven years in Johns Hopkins; during my visit he closed a typhoid perforation at 2 A.M., six hours after the first symptoms appeared.

I also had the pleasure of seeing Dr. Howard Kelly, operate in his private hospital, where he has a beautiful and thoroughly equipped operating room. He uses cumolized catgut extensively for ligatures and sutures.

CONCLUSIONS.

1. St. Louis should have better hospitals.
2. St. Louis has good surgeons who are somewhat handicapped in their facilities for operating.
3. Pavilion hospitals not necessary in these days of asepsis. City hospitals should be high up—sky scrapers.
4. These are the days of the most perfect practical asepsis and the achievements of surgery are a fitting climax to the progress of the century.

[834 NORTH KINGS HIGHWAY.]

EDITORIAL.

THE NECESSITY FOR A CLOSER UNION OF THE MEDICAL PROFESSION IN MISSOURI.

Efforts are being made by the American Medical Association to bring about a closer union of the regular medical societies in the United States. At the last meeting of the Association a committee was appointed to consider and recommend a plan for a thorough organization of the profession of this country. At the present time there are about thirteen hundred regular medical societies in the United States, most of which were organized, and are acting, independently of each other. The result is a lack of uniformity or concert of action among these bodies.

In most of the States no systematic attempt has been made to organize local societies on a specific plan, the result being no uniformity of purpose or action in matters pertaining to the welfare of the profession in the State, consequently there can be no united effort made—political or otherwise. If the profession is to become a united body the beginning must be made in the county medical society. These must be organized in every county of the State and in harmonious relation to the State organization, and this in turn with the national organization.

The difficulties which have beset the efforts to secure legislation for the regulation of the practice of the healing art in this State show that the opposition on the part of those whose objectionable practices would be prohibited by it are strongly organized and are powerful, and have with them the powerful influence of the lay press to which they are a source of profit. It has also shown that the profession must be so organized and united as to utilize its fullest power for the purpose of combatting this influence and it must not be content

to leave to the efforts of a few courageous and self-sacrificing members the burden of defeating a strong opposition and which is daily becoming more powerful and which is daily making it more difficult to secure adequate protective legislation.

The tendency in the commercial world is to a closer union with a concentration of energy and the development of its greatest forces. Such a plan must be followed by the profession; it must be brought to a realization of the power and influence that it can wield through a close and a thoroughly organized union of its members, and such an organization must be effected, *it has become a necessity*. The politician hearkeneth eagerly to the strongest influence, be that what it may, and the ability to reward and the fear of retaliation are the motives that most frequently govern the actions of the average politician. In order for the profession to accomplish its best results and secure its greatest influence, a medical society must be organized in every county in the State to which should belong every regular practitioner in that county. Every member of the profession in the State must be interested in the general welfare of the profession and every county society must be brought into a close working relation with the State organization.

Then, too, the influence of the State association must be exerted and made felt where it will do the most good. The time and place of holding the annual meeting must be changed. It should hold its annual meeting in Jefferson City in the years in which the Legislature meets and while that body is in session. Provision for this change should be made at the next annual meeting of the State organization. More time should be devoted to a consideration of the Legislative interests and the general welfare of the profession at the annual meeting.

The office of President of the State Association should not be regarded simply as an honorary position, but as the administrative and executive head of the profession in the State, and the occupant of that position should be chosen for his fitness for it, and should be a man of good executive ability, one who may be able to promote the organization of county societies and to weld them in a strong cohesive body.

To obtain recognition for its demands the profession must make its influence felt—politically if need be—and it must act as an unit in

all matters of interest to it. To do this it must organize and that thoroughly.

THE NEW MEDICAL PRACTICE ACT.

After a protracted and hard-fought contest the bill prepared by the Legislative Committee of the Medical Association of Missouri has passed the Legislature, though in an amended form, and is now in the hands of the Governor for his consideration. Owing to the very strong opposition to the passage of the bill on the part of those whose practices would be prevented by its provisions, Governor Dockery will give a public hearing to both sides before finally passing upon the measure, though it is confidently believed that he will approve the measure and attach his signature to it.

The bill in its amended form is not all that was hoped for, but under the circumstances is the best that could be obtained at present, and even in its present condition it is a marked improvement over the unregulated condition that formerly obtained.

The scope of the bill was, in a measure, curtailed by one of the amendments to it, and though its comprehensiveness is not so great as might be desired, it contains many excellent provisions which will be of material advantage to the profession in this State, and will doubtless serve as a foundation upon which to add to or to take from, as the necessities and opportunities present. The other amendments do not materially affect the purport of the bill and are of slight importance. The judicious use of even an imperfect instrument will give good results, and in the hands of a State Board of Health composed of conservative and level-headed men the advantages of the measure will be demonstrated both to the satisfaction of the public and of the profession.

NOTE.—Since the above editorial was put in type, Governor Dockery has signed the bill and it has now become a law.

INEBRIETY : A VICE OR A DISEASE.

The ungovernable impulses that are caused by a desire for, and the effects from the free indulgence in alcoholic stimulants which irresistibly drives its victim, not infrequently, to a commission of a crime against the laws of society, are complex in their character and owe their origin to a variety of conditions over which the individual often has but slight control. To determine the mental responsibility, or irresponsibility, of his individual acts while in this condition is a difficult medico-legal question for alienists to solve.

Remondino advances the opinion that inebriety is nothing more nor less than an evidence of an active physical disintegration, and an intercurrent link in the chain of degenerative changes that have been going on not only from childhood or youth, but which was possibly the result of inherited tendencies. Various diseases appear at times whose etiological courses or processes of origin or reason for existence are most obscure and which are attended by as remote results. Hypochondria, hysteria and kindred neuroses are often attended by simulated heart diseases or seemingly well-established nervous disorders, or even by the most deceptive and unconsciously simulated organic affections, which, on account of the resulting nervous and psychic irritability and exhaustion, often bring about a degree of temporary mental alienation that drives their victims to the use of stimulants. The individual becoming convinced that in stimulation reposes his only comfort and safety, becomes intemperate in their use and there results the retroactive effects of overstimulation upon a weakened and unresisting system with a rapid general tissue change resulting in a condition of organic degeneration and decay, and the individual a victim of inebriety.

If this theory is correct the imbibition of alcoholic stimulants more or less constantly would be necessary for the satisfaction of the diseased conditions and appetite; on the other hand, however, there are a class of habitues to alcoholic stimulants, upon whom the desire comes periodically and in whom the immoderate use of stimulants for a short period appears to satisfy the demand of the system for a period

more or less long. Such cases would appear to be of the class that might be called a vice or habit rather than a condition of inebriety, such as the moderate drinker for the sake of conviviality, etc. Beard very properly drew a distinctive line between the functional disease, inebriety or dipsomania, and the drinking which is done sporadically and which may be said to be a habit.

THE CONVEYANCE OF YELLOW FEVER INFECTION.

The recent meeting of the Pan-American Medical Congress at Havana was rendered noteworthy by the report of Drs. Reed, Carroll, and Agramonte of the Medical Department of the United States Army, of the results of their investigations of the cause and method of transmission of yellow fever (*Journal of the American Medical Association*, February 16, 1901.)

Following the theory advocated by Finlay, of Havana, that the mosquito is an active agent in the dissemination and the propagation of the disease, and influenced by the knowledge of the part played by it in the production of malaria, they have carried out, on non-immune men, a series of careful and thorough investigations that seem to prove beyond doubt the ability of this insect to transmit the disease.

The individuals upon whom the experiments were made were kept in a detention camp, removed from any source of outside infection, until after the incubation period of a possible previous infection had passed, when they were subjected to the bites of mosquitos which had previously bitten the patients who were there in an active stage of the disease. In every instance with one exception, yellow fever developed after an incubation period varying from forty-one hours to five and three-quarter days.

The variety of mosquito used in the experiments was the *Culex fasciatus*, and it was observed that a period of time must elapse, after having fed on the blood of a yellow fever patient, shorter in a high temperature than in a lower, before the insect can transmit the virus to the healthy individual. To an error in time from this cause was at-

tributed the failure of inoculation of the single individual in the experiments above referred to. Other non-immunes in the same camp were not affected by the disease which was strictly limited to those individuals who had been bitten by contaminated mosquitos.

In order to determine the possibility of the transmission of infection by fomities, several non-immunes occupied for a period of two weeks a room containing the beds, soiled bed-linen, and garments of patients who had had the disease. During this period these beds were occupied and the garments worn without contracting the disease.

In order to test the possibility of a direct transmission of the disease, two cubic centimeters of the blood of a patient, in the second day of the disease was injected subcutaneously into four non immunes, three of whom developed the disease after a short incubation period. The other, upon whom mosquito inoculation had also failed, was believed to have possessed a natural immunity to the disease.

The results of the investigations of Reed, Carroll and Agramonte are of immense importance, particularly as bearing upon upon the question of quarantine and disinfection. While their efforts have failed to throw additional light on the actual cause of the disease itself, they have pointed out to a certainty one of the ways, at least, by which the infection is transmitted, and, doubtless, one of the way by which it is not transmitted, if the results of their investigations regarding the agency of fomities in its transmission is corroborated by other observations.

Whether the mosquito is the sole agent in its transmission requires further observation; also whether other varieties of this insect than the *culex fasciatus* play a part in its propagation is at present unknown. It is within the realms of possibility for future investigations to show that certain inoculative diseases of the human being have a selective affinity for the different varieties of the mosquito, for it has been definitely proven that the *culex anopheles* serve as the intermediary agent for the plasmodium malarie, and the *culex fasciatus* for the yellow fever organism as the experiments of Reed, Carroll, and Agramonte have proven.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of December 20, 1900; Dr. Chas. J. Orr, President,
in the Chair.*

DR. A. E. EWING read a paper (see page 177, this number) entitled

Clinical Demonstration of Cilia in the Anterior Chamber.

DISCUSSION.

DR. M. H. POST, in response to a request to open the discussion, said there was little to add—Dr. Ewing's remarks included all there was to be said on the subject. The cases are very rare and but few are on record, for this reason every case should be recorded.

DR. FRANCIS REDER asked where the cyst originated and whether it would cause any injury to the eye.

DR. EWING said there was little known as to where and how the cyst formed. It was supposed that it formed from the epithelial tissue carried in with the lash, or the endothelium from the iris might take on action and form around the root of the lash. The cyst always forming around the base of the lash rather favors the supposition that it is from the epithelium. Schweninger, Masse and Hosch had experimented by introducing cilia into the anterior chamber of animals and watching the results, but the speaker was unable to obtain their articles upon the subject.

DR. CHARLES SHATTINGER saw in this cyst formation a sort of paradigm and confirmation of Cohnheim's theory of the origin of neoplasm. Here, too, cells are displaced from a normal environment and find themselves in a position where they do not belong. He saw a certain parallelism between what in this case was a pathological

condition produced by injury, and a tumor formation from embryological remnant.

DR. EWING, in closing, said his personal opinion about the cyst was that it formed from the epithelium around the root of the lash. This seemed the most reasonable explanation. The suggestion of Dr. Shattinger that there is a parallel with embryological cases is also possible.

DR. M. A. GOLDSTEIN made an

Exhibition of Anatomical Preparations of the Ear, Nose and Larynx,

DISCUSSION.

DR. ROBERT BARCLAY said he was glad to see the drum-head and auricles had been removed before the mastoid operation was done. We should have absolutely free drainage from the attic of the tympanum. He had examined many fatal cases and he found the greatest danger was through the attic of the tympanum or through the petrous portion. If the drum-head and auricles are removed before the operation we can frequently drain the inflammatory products from the nidus of infection and relieve the trouble; whereas if we go in the opposite way we do not always get a cure. He complimented Dr. Goldstein on having such beautiful specimens.

DR. GOLDSTEIN said he did not think it necessary to remove the drum-head and auricles to maintain drainage and secure satisfactory results in mastoid operations. He had not resorted to this method, and had been successful in nearly all of his cases. The President's inquiry about injury to hearing in these cases brought out a point which offers another factor in favor of rationalism in the mastoid operation. In acute middle-ear inflammations retention of a certain amount of hearing is very evident in a large proportion of the cases where the drum membrane and auricles are not removed. This does not refer to the chronic sclerotic forms complicated by mastoid invasion, but rather with mechanical interferences, such as pus or caries of the ossicles. But he thought enlargement of the mastoid area and curettement was as far as rational surgery should go. He took a stand against radical surgery in these cases.

DR. BARCLAY said he had tried to make it clear that he spoke of cases where the nidus of inflammation was in the middle-ear—in the attic of the middle-ear. The point of danger is in the roof of the antrum and attic of the tympanum, and the way to drain these is down and out through the canal.

Meeting of January 17, 1901; Dr. Norvelle Wallace Sharpe, President, in the Chair.

DR. HUDSON TALBOTT read a paper (see page 187 of this number) entitled:

Report of a Case of Articular Rheumatism with Fatal Heart Complications in a Child.

DISCUSSION.

DR. F. G. NIFONG believed rheumatism was more frequent in youthful persons than is generally believed. He thought this affection in young persons was often attributed to or called "growing pains." He had seen quite a number of young persons affected with rheumatism. One in particular was remarkable. It was an infant and the child had rheumatism in a number of its joints. The mother suffered with the same trouble to the extent of suppuration in one joint while pregnant. The infant was but three months old and the trouble readily yielded under the administration of the salicylates.

DR. GEORGE HOMAN thought the bulging of the ribs described in the case could be accounted for by an effusion in the pericardium, and that aspiration might have relieved this condition. Inability to have the patient under constant observation was, of course, a serious disadvantage to an medical attendant. In the treatment of rheumatism the speaker said that hardly enough attention was given to the action of the skin. He thought the kidneys must share the irritation with other organs in this abnormal condition of the blood, and there is danger of stimulating the kidneys too much and setting up a nephritis. For this reason we should depend upon the skin as much as possible, inducing free perspiration and eliminating dangerous materials in that way and thus taking the burden off of the kidneys.

DR. HENRY JACOBSON agreed with Dr. Homan that free perspira-

tion should be induced in rheumatism. A case treated with hot air apparatus readily yielded. The patient was given a hot vapor bath every day. Salophen was given, but the most beneficial results were, the speaker believed, obtained by the bath. He did not believe the case under discussion would have terminated differently even had the Doctor had the child under constant care. The bacterial poisoning was so severe and the heart affected to such an extent that the child would have succumbed.

DR. H. S. CROSSEN said this case showed what might happen to children affected with heart trouble. The general idea is that heart complications in children are frequent but not serious and usually disappear. The first case of heart disease he had seen was in a girl, very anemic, and the murmurs were unusually loud. He was a student at the time and did not get the murmurs differentiated very well of course but he remembers very distinctly that he thought the patient would die right away. Under treatment the trouble disappeared. Dr. Talbott's case showed that we ought to be careful in prognosis of these troubles in children. The urine ought to be rendered alkaline and kept so for some time. He believed the use of alkaline treatment was considered an important point in preventing cardiac complications in rheumatism. He thought the mixed treatment (alkaline and salicylates) would have more effect in preventing heart complications or allaying them when begun than the salicylates alone.

DR. FRANCIS REDER said it was a singular fact that nothing definite was given in this era in the cause of rheumatism. We know the blood is in a strongly acid condition, and from this we infer that rendering the blood alkaline combats the disease. Better success has been observed with this treatment, but it is necessary to push to heroic doses. The conditions found in the heart are inflammatory conditions about the valve and at the attachments of the valve, and, of course, the further complication of pericarditis and even the structures of the heart are sometimes involved. In the treatment of acute and articular rheumatism much attention should be given the immediate comfort of the patient. The suffering is intense and they present a deplorable picture. The hot bath is good but cannot always be applied. Jaborandi applied to the joints affected gives relief and produces a profuse pers-

piration. The administration of alkalines or the salicylates comes next. The tincture of the chloride of iron is a superior remedy and this ought to be continued after convalescence has been established for some time.

DR. J. C. FALK believed acute inflammatory rheumatism is much more frequent among children than has been generally supposed. We often see children or infants having symptoms which can only be explained on the supposition that it is acute inflammatory rheumatism, articular, or muscular. He thought, too, that heart complications were frequent in children and that they were more serious and lasting in their effects than is usually supposed. The fact that a cardiac murmur following an attack of acute inflammatory rheumatism in a child soon disappears does not always indicate that the heart has recovered from the damage done, for it is often only temporarily adjusted. The contrary may also be true, as serious lesions not infrequently follow rheumatic attacks without the cardiac sounds being pronounced. The greater part of these heart lesions following acute inflammatory rheumatism he considered a permanent injury to the organ—that is, the valve never regains a perfect condition; compensation may be established and be more or less efficient for a number of years, but sooner or later an exciting cause will make the damaged part manifest. He believed the disease was bacterial. He could not account for the clinical picture presented by acute articular rheumatism or any other hypothesis. In his opinion that variety of rheumatism so frequently seen in the different myalgias has not a bacterial etiology, but is purely a local manifestation of a constitutional dyscrasia—an obliquity of tissue metabolism—which, for want of a more descriptive designation, is called the uric acid diathesis.

DR. JOHN GREEN, JR., said the theory, which the essayist intimated as his belief—that the cardiac complications were due, perhaps, to the acid conditions of the blood and not to specific micro-organic causes, was strengthened by the statement of Dr. Crossen—that the alkaline treatment was frequently prophylactic as well as curative.

DR. JACOBSON did not agree with Dr. Green and Dr. Crossen that the alkaline treatment prevented heart complications. In some of the large hospitals comparison had been made and it was found that a cer-

tain number of cases would have heart trouble whether treated with the alkaline method or with the salicylates. The condition of the blood is disputed, some investigators claiming it is acid, and some that it is alkaline.

THE PRESIDENT said that he had hoped to hear some remarks upon the surgical treatment of acute articular rheumatism. His attention had been drawn to it favorable some years ago by the researches of O'Connor, of Buenos Ayres, who had successfully instituted a surgical treatment of joints with rheumatic infection. The contents of the joints so treated were invariably found to be turbid and to contain a micro organism. He also found that the surgical evacuation and cleansing of the joint with subsequent competent drainage had been curative. He also found, as a collateral point of interest, a comparative indifference to infection processes in joints generally. He instanced one man operated on for a rheumatic infection of the knee-joint. This case, like the remainder of the series, had been in the hands of other men, and had been dosed with salicylates, iodides, colchicum and all other drugs in vogue, without avail. When operated on, foul, purulent contents were evacuated, and a large gauze drain inserted. When he left the hospital he was walking around comfortably. Some months after, O'Connor was appalled to see this man come in and say, "Doctor, my leg's leaking." On examination, a fistula was found leading into the joint, and discharging synovial fluid. When asked if it gave him any trouble he said, "No, that it was as sound as when he enlisted in the Horse Guards." This navy had been daily engaged in his laborious and uncleanly occupation. His baths were undoubtedly no more frequent nor thorough than others in his station of life. He had given no attention to this articular fistula; and yet no infection had occurred, and in fact shortly after the tract spontaneously closed. The speaker felt that we were justified in expecting much from the surgical treatment of joints infected by rheumatic processes.

DR. TALBOT, in closing, said he had found a number of cases on record where there was undisputed history of rheumatism in quite young persons. The youngest he had found was a child twelve hours old and there was a specific history of rheumatism. The mother of

this child had rheumatism and the child presented the evidences of it and yielded to treatment, the mother's case continuing some few weeks after delivery when it too yielded. There are several cases of children affected with rheumatism aged only a few months. He thought Dr. Falk correct in his statement that many cases of rheumatism in children were undetected, and he also thought that a good many were called rheumatism when in fact they were not. One of the points mentioned in the essay had been left unanswered; that was, whether the heart affection is a complication, a sequela, or a part of the disease; is it due to the micro-organism or is it due to a blood dyscrasia, whether due to the acid condition of the blood or to toxins, or due to an infection of the pericardium acting simply as a joint and becoming infected as a joint? He supposed this was still an unsolved question and he had found nothing conclusive on the subject in the literature consulted, but believed the cardiac affection due to the constant irritation of the abnormal blood, which is, as it were, freighted with toxins. The bulging of the ribs might have been due to pericardial effusion, as suggested by Dr. Homan, but there were no symptoms of pericarditis or effusion in the sac other than that of bulging.

DR. F. G. NIFONG read a paper (see page 191 of this number) entitled:

Points of Interest Gathered from Some Eastern Hospitals.

DISCUSSION.

DR. J. C. FALK agreed with the essayist in the statement that for large cities a hospital built of many stories and compact is superior to the pavilion plan. He did not think a city of the size of St. Louis should attempt to build a hospital on the pavilion plan. Provision, of course, should be made for the isolation of virulent infectious diseases. The great majority of the patients, however, should be better cared for in one large building.

DR. HENRY JACOBSON thought there ought always to be erected a separate building at a distance from the general hospital for the observance of suspected small-pox cases. There is nothing like a detention building here at present. During his service at the City Dispen-

sary this was impressed upon him, for in times of small-pox epidemics there is great difficulty the first twenty-four hours in pronouncing the disease such, especially in negroes; and there is danger of sending a syphilitic to the small pox hospital, and of sending a small pox patient to the general city hospital. This has occurred not only with syphilis, but with small-pox, causing great commotion and general vaccination and exposure to small-pox unnecessarily.

DR. GEORGE HOMAN did not agree with some of the conclusions of the essayist. The conditions in New York City are exceptional. It is situated on a long narrow island, the population is enormous, land values have reached exorbitant figures, so that practically the hospitals in order to meet the demands upon them have no way to enlarge their capacity except skywards. But while unfavorable local circumstances compel to this course it does not follow that this bad example should be imitated where the conditions are different and ample ground space is available.

The New York people, of course, put the best possible face on the matter, but to build a warehouse six, eight or ten stories high and call it a hospital does not make it one—that is, an institution for the best care and cure of the sick, and that is the sole and dominating purpose of such an institution.

He thought further that there was too much of a tendency among hospital men to look upon the patients as mere material—a part of the hospital mechanism, and not as human beings with tastes and desires akin to their own. The instinct of the race in sickness and suffering turns toward the things of Nature—trees, green fields, flowers, birds, etc., and the moral, mental and physical conditions of patients are bettered by an outlook on such scenes rather than views of gravel roofs, brick walls, smoking chimneys, and the like. It is a serious mistake to remove people too far from Mother Earth, for such she is to us in soberest fact; the “foot on the earth,” as the French say, expresses a vital necessity.

Where abundant space is available, as found here, he believed that a hospital building should certainly not exceed three stories in height. He would be sorry to see the bad example of New York

copied by St. Louis. It is not necessary here, it may be a deplorable necessity there.

DR. JOHN GREEN, JR., said he had visited the Boston hospitals two years ago and some points observed there might be interesting in connection with the New York hospitals. The City Hospital in Boston had recently added a new surgical addition. It is an immense building with every facility for handling all sorts of cases. There are several small emergency operating rooms for handling unclean cases, and a separate room where none but clean cases are operated. In one operating room there are several beds where a patient may be placed, if necessary, for the time being after the operation if the condition be critical. There is a large operating amphitheater illuminated by upper lights and seating four hundred students. The sterilizing room has three large sterilizers and everything there is absolutely immaculate. Adjoining this room is the instrument room containing a half dozen large instrument cases, one of which is devoted to abdominal retractors alone. The instrument cases are examined bacteriologically at stated intervals. There is a fine medical library open to the internes and staff of the hospital. The dead-house is very complete, and there is a splendid pathological laboratory. One interesting feature is the new "South Department," where contagious diseases only—the speaker thought but three, scarlet fever, measles, and diphtheria—were treated. The building has three different pavilions connected by bridges. They are absolutely the most perfect structures for the purpose that could be imagined; every detail is carried out with the greatest care. In the diphtheritic pavilion instruments for intubation lie ready for use at all times so that there may be no delay in operating in urgent cases. Consumptives are not treated in this hospital. An emergency case may incidentally be tubercular, but when this is discovered provision is made for treatment elsewhere.

The Children's Hospital, presided over surgically by Dr. Bradford whose reputation as an orthopedic surgeon is international, is rather an old building and contains the operating room where Dr. Bradford does those remarkable operations in in congenital hip dislocations. The room is hung with sterilized sheets from the ceiling to the floor and these are removed at each operation. There is an ex-

tended sun parlor where convalescent patients are carried on forms or wheeled on specially constructed invalid chairs. The speaker agreed with Dr. Nifong, that the hospital situation in St. Louis was sufficiently heartrendering.

DR. NIFONG said he knew it was necessary for the hospitals in New York to be built high, but nevertheless he believed they had the advantage of the horizontal hospitals. He believed it was easier to heat them and care for them in every way. However, there should be separate buildings for the different diseases, not one building for all. There should be a surgical building, a medical building, one for acute infectious diseases, and so on, but no limit as to height. It is very pleasant to make such a trip as he had and well repays one.

The New York State Prison at Sing-Sing Condemned.—

The famous State prison at Sing-Sing, New York, has been condemned by the Board of Health of that State as unsanitary and its removal to a higher situation is recommended. The prison is situated near the edge of the Hudson River and it was found that at high tide the floor of the prison is only four feet above the water-level. As a result of this condition the sewage in the drainpipes is backed up into the prison and where, owing to the imperfect discharge, it decomposes. The prison was established in 1834, and the buildings were erected at a time when the sole idea was to obtain security, and little or no thought was given to the health and comfort of the inmates. The massive stone structure is dark and forbidding in appearance, its walls drip with moisture in foggy weather, while the cells are very chilly in winter, with windows so deep and low that the direct rays of the sun seldom enter. The village of Sing Sing is known principally on account of the prison, but it is thought that if the present structure is abandoned a location elsewhere will be chosen.

REPORTS ON PROGRESS.

MEDICINE AND THERAPEUTICS.

The Use of the Suprarenal Capsule in Diseases of the Heart.

S. Florsheim (*N. Y. Medical Journal*, October 6, 1900) states that his experience with this substance extends over a period of eight months, in which he has observed its action in many cases on both healthy and diseased hearts. He concludes that, when the heart has been irregular in its rythm, with lessened force and quality of its sounds in many cases the drug causes the heart to become more regular, in others fully regular, the rythm improves, the pulse becomes full and strong but soft—"easy-going," so to speak, instead of hard and laboring. That it does not materially effect the pulse-rate, though he has not tried it in very rapid pulse. That the heart seems markedly toned up, enabling it to perform its work much better and with greater ease. When the heart's action is full, bounding and regular (predominating hypertrophy) no appreciable effect was noted. When the heart is flaccid, the pulse weak, the apex-beat diffused, the action of the heart fluttering and irregular (predominant dilatation) we find the most marked and beneficial effects of the drug. In two cases he found fully one-fourth of an inch contraction on each side of the heart after administration, and the apex-beat which which was diffused and difficult to locate became better defined.

The Prevention of Nausea and Vomiting During Anesthesia.

Louis J. Hirschman (*N. Y. Medical Journal*, December 15, 1900) states the results of the administration of chloretone in thirty cases in which it was given before the anesthetic with the view of preventing nausea

The drug is a valuable hypnotic, antiseptic and analgetic; a one

per cent solution is said to be equal to a two per cent solution of cocaine for local anesthesia ; as a hypnotic in eight to twenty grains it gives very satisfactory results, and does not depress respiration or circulation.

For the purpose mentioned in his paper it is given in a dose of ten grains to women or boys under 16 years of age, and fifteen grains to male adults, half an hour before the anesthetic ; by the time the latter is administered nervousness is quieted and the patient is calm. It requires from seven to twelve minutes to anesthetize with chloroform and up to fifteen or eighteen with ether. Patients who have had chlorotone require less of the anesthetic and are not so apt to come out of the anesthesia suddenly during the operation if the anesthetic be temporarily lessened.

Of sixty patients taking the anesthetic, thirty received chlorotone as stated above and the other thirty did not ; of the latter, twenty-four were nauseated and nineteen were unable to retain liquid the following day ; of the former, only three were nauseated and these only slightly ; none of them required stimulation during the anesthesia.

A Clinical Analysis of Digitalis and Its Preparations.

Leon L. Solomon (*N. Y. Medical Journal*, February 9, 1901) contributes a valuable article to our knowledge of the action of the glucosides of digitalis and it is worthy of careful perusal. We can here give only a summary of some of the more important conclusions :

Digitonin is readily soluble in water, sparingly in alcohol ; it is a direct cardiac depressant, resembling saponin, and like it directly antagonizes the cardiac action of digitalin, digitalein and digitoxin, by depressing the vagus centrally and peripherally ; it is the most active diuretic principle among the digitalis glucosides, but irritates the stomach very much.

Digitalin, digitalein and digitoxin are soluble in alcohol but not in water, and in their action on the circulatory system have much in common, but also present certain well defined differences in their effects. They are all heart stimulants, acting directly on the heart muscle and making the pulse stronger and firmer.

Digitalin also has a special influence on the vasomotor center in

the medulla and upon the ganglia in the muscular coats of the blood-vessels, contracting the vessels and thereby raising the arterial pressure; it also slows the pulse by directly stimulating the cardiac ganglia

Digitalein and digitoxin do not directly raise arterial tension nor slow the pulse; both dilate the renal blood-vessels and increase the flow of urine.

Digitoxin is the chief ingredient of the leaf of foxglove, is soluble in alcohol or chloroform and slightly soluble in ether; it is a glucoside, and as prepared by Merck is a white crystalline powder. The ordinary dose is $\frac{1}{1000}$ to $\frac{1}{250}$ grain; $\frac{1}{40}$ grain is regarded as the maximum. As a diuretic digitoxin is superior to digitalin, since it dilates the renal vessels while stimulating the heart; its action is more prompt, often within twelve hours, and it is less liable to cumulative action; its effect is said to sometimes persist for eight to ten days. We have, however, the difficulties to contend with that it is liable to prove somewhat irritating to the stomach when given by the mouth and to the skin when given hypodermatically.

The different properties of the various principles explains the different effects obtained from the officinal preparations of digitalis. In the tincture and fluid extract digitalin and digitoxin predominate, but some digitalein and digitonin are present; its action is, therefore, chiefly cardiac, to a less extent diuretic.

The infusion, containing little if any digitalin and digitoxin but a considerable amount of digitonin and some digitalein, is chiefly diuretic in its action (if made from leaves and not from a fluid extract).

Causes of Lithemia and Its Treatment.

Haig (*International Medical Magazine*, January, 1901) maintains that in England all diseases attributable to this cause are produced by the introduction into the patient's system of uric acid or substances converted into it, through the ingestion of flesh, tea, coffee, cocoa and leguminous vegetable. That the ten grains of uric acid normally produced daily by the body would do no harm without the introduction of an extra amount by this class of foods. That the most important effect of uric acid on the body is its mechanical influence on the capillary circulation. That the circulation diseases produced by it far ex-

ceed in number and importance those due to local irritation—as gout and rheumatism. That there is no uric acid diathesis; the condition so-called is produced as above stated. That diet treatment should consist in the avoidance of foods containing uric and xanthin, and the use of cereals, milk and cheese, vegetables, except the legumes, fruits and nuts. Drug treatment is rarely necessary, but salicylates may be used to hasten elimination.

Frank Billings gives as his opinion that uric acid and the xanthin bases represent different stages in the oxidation of the nucleins of the body. That he does not believe that uric acid exerts any toxic effect in the system apart from the local irritation caused by the deposit of its sodium salts. That a mixed diet is usually preferable in so-called lithemic states, though individual cases sometimes do best on a non-nitrogenous diet. In fact, individual treatment as to diet is necessary in all cases; and, furthermore, that diet is of secondary importance as compared with the general hygienic management of the patient.

He does not depend upon any special medicinal remedy; like the diet, the medicinal treatment is an individual study. Iron, quinine or strychnine may be required by some, bromides or other sedatives by others; alkalies will be of benefit in some cases, salicylates in others.

Professor Carl von Noordin considers it as an established fact that the purin bodies (uric acid and the xanthin bases) are derived from nuclein or nucleinic acid; in this the nucleins of the food as well as those of the broken-down tissues have a share. Not all the nitrogen of the nuclein appears in the urine as uric acid; a part is excreted as urea, but whether a definite proportion or not, has not been determined; it is likewise uncertain whether there do not exist other sources than nuclein for the purin bodies.

As to disturbances other than the local irritation produced by uric acid deposits, it is uncertain whether they are produced by circulating uric acid or by other chemical materials which are formed at the same time, perhaps by substances representing earlier stages than uric acid; he considers it improbable that they are produced by uric acid itself.

As to diet he only prohibits those articles which are rich in nucleins—as the internal glandular organs (pancreas, spleen, etc.) and allows only a moderate amount of meat once a day, which should not

contain exceeding 100 grams of albumin; he forbids strong spices, since all lithemic patients are disposed to chronic nephritis, and most of them already have slight changes in the kidneys; in other respects he is guided by the condition of the patient. In general, when no contraindication is present, all patients with the uric acid diathesis should partake freely of fluids.

In true gout he prefers the use of moderate doses of bicarbonate of soda to all other remedies; he usually gives half of the daily dose early in the morning, the other half late in the evening, each in about 200 grams of hot water.

Acute Articular Rheumatism.

David Riesman (*Journal of the American Medical Association*, December 8, 1900) concludes that:

1. Acute articular rheumatism is a specific infections disease.
2. It is not an attenuated form of pyemia, in the sense that it is due to pyogenic organisms of reduced virulence.
3. Its true cause has not been definitely discovered, although the bacillus of Achalme may prove to be the long-sought micro-organism.
4. A number of joint affections resemble acute articular rheumatism, just as certain pseudo membranous inflammations of the throat resemble diphtheria, and various diseases of the lungs resemble typical lobar pneumonia.
5. These joint diseases should, wherever possible, be separated as rheumatoid or pyemic affections.
6. They are best designated according to their causes—as streptococcic, staphylococcic, gonococcic or pneumococcic arthritis.

A Further Contribution Concerning the Efficacy of the Supra-renal Gland.

W. H. Bates (*International Medical Magazine*, December, 1900) recommends the use of the dried and powdered gland of the sheep, or a freshly-prepared filtered solution of the same.

As a hemostatic he considers it the best known and especially useful in the nasal hemorrhages of "bleeders," and in operations upon

the nose. "After its use hypodermatically the normal skin may be incised without the loss of a drop of blood."

As an astringent, after local application the mucous membranes in health or disease are always whitened. "When five grains of the dried gland are placed upon the tongue and swallowed in a few moments—as soon as it is moistened, congestion of the eye, ear, nose and lungs has been relieved in three minutes. Acute inflammations of the mucous membrane of the eye are always benefitted and frequently cured by the local use of the extract."

In hay fever he finds it gives great relief used locally, but as its effect is temporary it must be used once or oftener daily.

In edema of the glottis six cases are reported in which life was saved by the internal or local use of suprarenal capsule.

He also reports benefit from its use in exophthalmic goitre, bronchitis, asthma, congestion of the lungs, edema of the lungs and hemoptysis.

He regards it as the most powerful heart stimulant known; it does not produce any apparent effect on the normal heart, nor in heart disease when the pulse is normal. "Three minutes after five grains of the dried gland are chewed and swallowed, a weak pulse of organic heart disease becomes stronger; a high tension pulse of a laboring heart becomes softer, and an intermittent pulse, or one irregular in force or frequency, becomes regular."

HOGG.

NEUROLOGY.

Some Remarks on the Plantar Reflex, With Especial Reference to the Babinski Phenomenon.

J. T. Eskridge (*Jour. of Am. Med. Ass'n.*, January 19-26, 1901) reports observations of 830 cases with a view to establishing the value of the above-named sign. He uses 2550 cases taken from old records for the purpose of determining the frequency of the plantar reflex in nervous diseases in general.

The slow, almost deliberate, extension of the great toe, with or

without extension and separation of the outer toes, characterizing the Babinski reflex must be distinguished from the pseudo-reflex, which is rapid and not uniform.

The plantar reflex was found absent in 9 per cent out of 100 healthy subjects examined. A most interesting observation was the discovery that out of seven strong, vigorous nurses only one had a plantar reflex in both feet, one showed presence on one side, absence on the other; in five there was absolutely no response. Tests were made in the evening, when the nurses were tired and in the morning when they had rested overnight.

Dr. Eskridge believes that the absence of the normal plantar reflex a sign of exhaustion—having made the discovery in his own person—and he thinks it valuable in prognosis.

In nervous cases the plantar reflex taken before Babinski called attention to the peculiar phenomenon called by his name, was found to be present in one or both feet in 77.8 per cent, absent in both feet in 22.2 per cent.

Conclusions as to the Babinski phenomenon are as follows:

1. The Babinski phenomenon is an extremely valuable sign in diagnosis, and probably in prognosis and prevention.
2. It is not a pathognomonic sign of organic disease of the lateral tract.
3. We shall learn by subsequent observations that several poisons or conditions so irritate the lateral tract as to cause a pseudo-Babinski phenomenon, or an apparently genuine one, temporary in character.
4. Greater care should be used by the investigator and the careful study of cases should be much more numerous.

A Case of Malaria Presenting the Symptoms of Disseminated Sclerosis, with Necropsy.

William G. Spiller reported this case at the meeting of the American Neurological Association in May, 1900. We quote abstracts from the *Journal of Mental and Nervous Diseases*, December, 1900.

The symptoms were marked intention tremor of the left upper limb, marked ataxia of the left lower limb, transitory hemiparesis of one side of the body, and later of the other side; headache, vertigo,

drowsiness, diplopia, marked vertical nystagmus, distinctly scanning speech and exaggerated tendon reflexes on the right side. The man died after an attack of severe diarrhea, probably of malarial nature. In the microscopical examination every capillary of the central nervous system was found plugged with malarial pigmented parasites of the æstivo-autumnal form. A slight area of sclerosis was found in the outer part of the middle third of the left crusta, and the right crossed pyramidal tract was slightly but distinctly sclerotic. The most probable cause of this slight sclerosis of only one motor tract was small hemorrhages of ancient date. This view was confirmed by numerous small recent hemorrhages and altered blood pigment found within the central nervous system. The only apparent cause of these hemorrhages was the malarial parasite. No areas of disseminated sclerosis were found. The case shows that the symptoms of disseminated sclerosis occurring from malaria are probably the result of vascular alteration of the nerve centers. This seems to be the only case on record in which the symptoms of disseminated sclerosis occurred in malaria and a microscopical examination of the nervous tissues was made.

Coffee as a Beverage, and Its Frequent Deleterious Effects Upon the Nervous System; Acute and Chronic Coffee Poisoning.

William M. Leszynsky (*N. Y. Medical Record*, January 12, 1901) calls attention to the ill effect of excessive coffee drinking and gives a description of the symptom complex of acute and chronic coffee poisoning: A boy of 6 years, having eaten a handful of roasted coffee, was found in active delirium, dilated pupil, tremor, etc., and a pulse-rate of 200; visual and aural hallucinations were present. He recovered completely only at the end of a week. A traveling salesman, 30 years of age, drank from ten to twelve cups of strong black coffee daily for three weeks. A condition resembling delirium tremens resulted, from which recovery was slow.

But the chronic effects interest us more, and Dr. Leszynsky says these are: General headache and nervousness, apprehension in regard to some unknown impending trouble, mental depression and irritability, insomnia and restless sleep, bad dreams, sudden starting,

occasional or frequent vertigo, general tremulousness, precordial apprehension, cardiac palpitation, loss of appetite, frequent eructations of gas and constipation. Those most frequently noted are general nervousness, tremor, vertigo, restless sleep, cardiac palpitation, eructations of gas and constipation.

Chronic coffee poisoning may be and frequently is mistaken for chronic alcoholism. In treatment immediate and total abstinence from coffee is not recommended; substitutes for coffee, which may contain parched corn, peas, beans and corncobs, as well as sweet potatoes cut into small cubes, dried and parched, are not indorsed. Bromides with Fowler's solution and infusion of gentian are useful; later the bromides are discontinued and a pill of arsenic, quinine and strychnine is given.

Exophthalmic Goitre Treated by Intestinal Antiseptics.

Mary Putnam Jacobi (*Journal of Mental and Nervous Diseases*, December, 1900) reports observation of a female patient, aged 22 years, suffering with exophthalmic goitre, treated with bismuth salicylate and beta naphthol, and daily flushing of the colon. Previous treatment by nervous and vascular tonics had been of no avail. Under Dr. Jacobi's plan of treatment improvement occurred and was maintained. The urine was examined frequently as to toxicity and it was found that when the coefficient was low the patient was worse.

In the discussion following Dr. Porter spoke of two cases much benefitted by the same plan of treatment. Dr. Coswell found 15-grain doses of glycerophosphate of soda, given three times a day, had been useful in Graves' disease.

BLISS.

The Czar Rewards His Medical Attendants. — Of the physicians who attended the Czar of Russia during his attack of typhoid fever last fall, Professor Leo Popoff has been made body physician to the Russian Emperor, Dr. Tichskonoff honorary physician to the imperial family, while upon Dr. Hirsch has been bestowed the order of Alexander-Nevski.

OPHTHALMOLOGY.

**Prevalent Errors Regarding the Diagnosis and Treatment of
"Eye-Strain" from Various Causes.**

Ambrose M. Ranney (*New York Medical Journal*, October 6, 1900) in speaking of "refractionists," "eye testing parlors," etc., says that untold harm is being done by these men can not be doubted. The evil is sure to continue and grow until the medical profession and the general public at large are made to realize the truth and importance of the following statements:

1. The proper selection of glasses is most important from the standpoint of future health. Serious harm to the eyes (and general health as well) may follow the bad refractive work done by inexperienced people.

2. No glasses should ever be bought without a prescription being first obtained from an oculist—not a so-called "refractionist," but one who is a medical graduate in good standing.

3. No glasses (even when prescribed by a competent oculist) should ever be used until the correct grinding of the glass and its settings are verified by the oculist who prescribed them.

The author concludes his paper with the following axioms:

1. All errors of refraction (manifest and latent) should first be very accurately determined and as far as possible corrected for both distant and near points.

2. A mydriatic should be employed before suspected latent refractive errors are finally decided upon. Exceptions to this rule of procedure are rare.

3. The ophthalmometer of Javal should first be employed to detect and measure corneal astigmatism. Subsequently cylindrical trial lenses should be employed to verify the instrument of Javal or to detect astigmatism of the lens.

4. Neither retinoscopy, trial lenses nor the ophthalmoscope are positive and trustworthy in estimating latent refractive errors. The former is probably the best of the three in skillful hands; but serious errors may be made even by a competent retinoscopist.

5. A marked difference in the refraction of the two eyes should be corrected by proper lenses at all times and for all points. This is vital to good work on eye muscles as a preliminary step.

6. Cylindrical glasses should preferably, but not necessarily, be set in spectacle in order to lessen the danger of alteration in the axis of the cylinder.

7. No glasses prescribed should ever be worn by a patient until they have been inspected and verified by the oculist who prescribed them.

8. The frames selected by the patient or optician should always be inspected by the oculist with care to guard against decentered lenses. Each pupil should accurately correspond to the center of the corresponding lens. In children the frames may have to be changed from time to time on account of the head and face.

9. Patients should be personally instructed by the oculist to observe any decentering of their own lenses, that often occurs from the bending of the frames or nose-clips; also to personally test the vision of each eye separately from time to time (by means of test-cards) to see if the refractive correction remains perfect.

Such education of the laity unquestionably takes much time and trouble, but it pays in the end by giving the patient valuable information that may prevent relapses of some previous nervous or eye disturbances.

10. Patients should always be cautioned by oculists to have their lenses verified whenever they fall out of the frames and are replaced, or whenever a lens gets broken and a new one is made.

The stupid blunders that are not infrequently made by jewelers and opticians are more apt in this way to be detected early, and the oculist (who is most apt to be held accountable for the distress caused by others blunders) may hold the patronage of his patient longer by timely words of caution.

11. All tests made to determine either the power of individual muscles of the orbit or the presence or absence of equilibrium of the ocular muscles, are of no positive value until all errors of refraction are determined and properly corrected by lenses.

12. The first muscular test made upon any patient by the ocu-

list should be recorded as revealing only the manifest muscular error in contradistinction to latent muscular error), and these tests should invariably be made with the proper lenses placed before the eyes of the patient to correct refractive errors, if they exist.

13. The manifest muscular errors (revealed at the first examination) should never be regarded as possessing much clinical importance except as possible pointers toward some special type of heterophoria and a guide to the oculist in searching for latent heterophoria.

Nothing indicates so clearly the inexperience of the absolute tyro in the investigation of eye strain as to hear and read the statements of oculists (often men of distinction in other lines of ophthalmology) that they "found only one degree of some anomaly," that "this defect was too insignificant to be seriously considered," and other similar expressions formed after only one interview with a patient suffering from some form of latent heterophoria. Such expressions make experienced men wonder and laugh.

14. The most positive and uniform standard of power in any of the ocular muscles (when studying some puzzling case of suspected heterophoria) is the normal power of abduction.

Whenever the abduction falls below 8° , latent esophoria is apt to be present; whenever it exceeds 8° , exophoria is apt to be present—although genuine exophoria is less common than most oculists seem to suppose.

Too much stress can not be laid upon this point, whenever an oculist is called upon to interpret the records of muscular tests in any individual case.

15. A marked difference in the power of surcunduction on the two eyes is always to be regarded as a suspicious sign of hyperphoria.

16. It is usually wise to follow up suspected latent hyperphoria with vertical prisms prior to any investigation of apparent anomalies of the lateral muscles, whenever hypo-esophoria or hypo-exophoria seem to exist.

Manifest or latent anomalies of the ventricle muscles in the orbit should be investigated first, as a rule, and rectified before coexisting anomalies of the lateral muscles are treated. There are exceptions to this rule of procedure, but it is a wise one to follow in most cases.

17. Whenever the refraction of a patient requires the constant wearing of glasses to correct it, the investigation of heterophoria by the wearing of prisms is most easily made through the aid of lorgnette frames that can be attached to spectacle frames by means of small hooks.

I keep a large assortment of such frames as part of my office equipment, with different bridges and interpupillary distances, so as to fit almost any form of spectacle frames. My office stock of prisms are so made as to be interchangeable and to fit all of my office frames.

18. Operative procedures upon the eye muscles should never be too hastily performed. It is vitally important, to insure the best results in any case, that the effects of accurate refractive correction (and possibly of prisms also) be noted for a time; and that repeated muscular tests be made before any surgical steps for its radical correction be advised or undertaken.

It usually takes time, patience, experience, modern instruments and much common good sense to successfully solve a complex eye-problem and to rectify an eye-condition that may be causing eye-disturbances, eye disease and nervous derangements.

SHOEMAKER.

PEDIATRICS.

Hemorrhagic Infection in an Infant Due to the Typhoid Bacillus.

Blumer (*Journ. Am. Med. Ass'n*, December 29, 1900) finds only about eight or nine cases of congenital typhoid on record. In all cases the mother was suffering from an attack of typhoid fever when the infant was born.

The writer reports a case in which the mother of the child was well at the time of birth, but had been ill with typhoid a few months before. A convulsion occurred on the third day, and vaginal hemorrhage occurred on the fifth day; the infant showed also some bleeding from the gums and petechiæ before death. At the autopsy the mes-

enteric glands were found hemorrhagic; the solitary follicles in the ileum were swollen.

Cultures taken from the lung, spleen, bile and umbilical cord showed the presence of the typhoid bacillus. The writer believes that the typhoid bacillus was transmitted to the infant at the time of the mother's attack, and remained latent in the tissues until just before birth.

Proper Methods of Handling Milk for Infant Feeding.

Palmer (*Philadelphia Medical Journal*, February 2, 1901) believes that milk that is free from bacterial life deleterious to the infant can be obtained in all large cities. Since it is now almost universally conceded that sterilized milk has certain disadvantages and is even injurious, the basis of infant feeding should be raw milk.

The writer then describes the methods employed to produce a milk fit for infants, which is used for the Trinity Diet Kitchen, a milk charity of Chicago. The milk is not sterilized and has given the best of satisfaction. Everything coming in contact with the milk is sterilized and is packed in ice. The milk is obtained from a special farm; the herd is mostly Holstein. The tuberculin test is applied at intervals; sick cows are immediately isolated; pure water is supplied from wells; the udders are kept clean. The food is chopped cornstalks, silage, bran, shorts and gluten meal; great care is exercised in regard to pasturing. The cows are thoroughly scrubbed before milking; the milkers are clothed in white clean suits; the milk is strained through gauze and cotton before reaching the pail. Only sterile vessels are used; the milk is cooled twenty minutes after milking.

[This article strikes the proper cord. In the future the ideal method will be to furnish pure milk to the infant, and sterilization and Pasteurization will be abandoned].

Whey-Cream Modification in Infant Feeding.

White and Ladd (*Philadelphia Medical Journal*, February 2, 1901), after an extensive study of whey as a diluent for cow's milk, concludes as follows:

1. By the use of whey as a diluent of creams of various strengths

we are able to modify cow's milk so that its proportions of caseinogen and whey-proteids will closely correspond to the proportions present in human milk. We, therefore render it much more digestible and suitable for infant feeding.

2. The best temperature for destroying the rennet enzyme in whey is 65.5°C. Whey or whey-mixtures should not be heated above 79.3°C. in order to avoid the coagulation of the whey proteids. The percentage of whey proteids in the whey obtained by us was 1 per cent, while in the analysis of the whole milk, approximately $\frac{3}{4}$ of the total proteid was caseinogen and $\frac{1}{4}$ was whey proteids.

On the basis of these analyses we were able to obtain whey cream mixtures with a maximum of 0.90 per cent and a minimum of 0.25 per cent of whey proteids in combination with percentages of caseinogen varying from 0.25 per cent to 1 per cent; of fats, from 1 per cent to 4 per cent; of sugar, from 4 per cent to 7 per cent.

4. The emulsion of fat in whey, barley water, gravity cream and centrifugal cream mixtures, were the same, both in the macroscopic and microscopic appearance. The combination of heat and transportation, such as sometimes occurs in hot weather, partially destroys the emulsion in all forms of modified milk, but this disturbance can be prevented by the simple precaution of keeping the milk cool during delivery.

5. Whey cream mixtures yield a much finer, less bulky and more digestible coagulum than plain modified mixtures with the same total proteids. The coagulum is equaled in fineness only by that of barley-water mixtures. The coagulum yielded by gravity cream mixture and centrifugal cream mixture is the same in character.

The Pathogenesis and Treatment of Rickets.

Pritchard (*Archives of Pediatrics*, February, 1901) exhaustively discusses this subject. The various theories now extant are discussed and nearly all dismissed. The microbic origin is rejected on the ground that the course and successful cure of the disease are utterly unlike known microbic diseases. Unhygienic surroundings are inadequate to cause the disease, since it occurs in families of the well to-do.

The author reverts to the old theory of the excess of lactic acid.

This is produced in excess by a deficiency in oxidation of overabundant carbohydrates. Rickets, then, is abnormal metabolism of carbohydrates. Overfeeding is the most common cause of rickets.

His conclusions are as follows:

1. The symptoms of rickets are such as can be explained by the presence of an excess of lactic and similar acids in the system.
2. Excess of lactic acid can be generated when the food supply (carbohydratic chiefly) is relatively excessive, or when the available oxygen is relatively deficient.
3. Infants fed on excessive diets can develop symptoms of rickets, although no element necessary for metabolism is absent from the food.
4. Such cases can be cured by reducing the food to normal proportions without in any other way altering the treatment.
5. The cause of rickets in these, and probably in all cases, is excess of some element, and that element probably carbohydrate.

The Care of Children With Mitral Lesions.

Swift (*Archives of Pediatrics*, February, 1901) gives a very practical article on the care of mitral lesions. He discusses first the most common clinical pictures of heart disease. The cause of endocarditis is rheumatism, whatever the nature of this may be. He states the problem in treatment as follows:

We have a growing, developing child who has become affected by rheumatic poison, in whom this poison has caused an inflammation of the endocardium; the rheumatic poison and the endocarditis have caused anemia and faulty nutrition throughout the system which interferes with the development of a compensating hypertrophy of the heart muscle; or, if the compensatory hypertrophy has been achieved the anemia causes a subsequent degeneration and dilatation.

Evidently the two great indications for treatment are to overcome the cause, the rheumatic poisoning, and to increase nutrition. Rest in bed is indicated if the heart is not doing its work properly, if the rheumatic poison is active, or if the nervous system is irritable. If the rheumatic poison is still active the salicylates should be administered steadily. The formula of medicine usually given is:

R	Sod. salicyl.	℥ss
	Tr. ferri chlor.	℥ss
	Acid. citric.	gr.x
	Glycerin.	℥iss
	Ol. gaulther.	gtt.viiij
	Liq. ammon. citrat.	ad ℥iv

Dissolve the sodium salicylatet and citric acid in the liquor; to the glycerin add the tr. ferri chlorid. ; mix the two solutions, then add the ol. gaulther. Give this mixture for a long time.

Improve nutrition; feed the children as generously as possible; stimulate the appetite with tonics and restoratives. Gradually allow the child to be put into a chair, then walking is very cautiously allowed; gradually more exercise is permitted. Open air exercise under a competent instructor is very beneficial.

Even if there is considerable leakage of the valve, under proper care and treatment, the outlook for life and usefulness is excellent.

ZAHORSKY.

SURGERY.

A Consideration of the Anatomical Construction Predisposing to Inguinal and Femoral Herniæ, and the Measures to be Taken in Securing Their Radical Cure.

Haynes (*N. Y. Medical Record*, October 13, 1900) says that six factors predispose to inguinal hernia:

1. The position of the inguinal canal so low in the abdominal wall.
2. The force from within is directed by the pouch of the external inguinal fossa.
3. The funicular process of the peritoneum must follow the cord from within.
4. The vessels and vas converge at the internal ring.
5. The cord passes through the abdominal wall.
6. A long mesentery or omentum, or both, particularly predisposes to the condition of hernia.

There can be no hernia when the two inguinal rings maintain their proper distance from one another; but when this pathological condition does exist, the proper way to cure it is to re-establish as nearly as possible normal conditions in the wall. The author splits the muscle and excises the veins after the fashion of Halstead, but reunites the various structures as Bassini describes, differing from both of the above-quoted authorities in that he prefers an absorbable suture material.

A femoral hernia occurs when Poupart's ligament stretches and the weak area beneath becomes greater. Consequently, this affection is more common in women on account of pregnancy and because the ligament is longer in that sex.

The Radical Cure of Hernia.

Warren (*Boston Medical and Surgical Journal*, September 13, 1900) has performed 98 operations of this sort during the past twelve years. He has been able to keep track of 58 living patients, and compiles the following results: When catgut was used, 40 per cent became infected, but where silk, only 17 per cent; consequently, there can be no choice as to a material.

The Bassini method is identical with the one to which Collins has come by a gradual process of evolution. In 84 per cent of all his inguinal operations a permanent cure has been effected; time since operation varying from one to ten years.

Lesions of the Pancreas Simulating Gall-Stone.

Richardson (*Philadelphia Medical Journal*, October 6, 1900) recites the histories of these unusual cases which go to show that the presence of gall-stones and of pancreatic tumor can hardly be foretold in every case.

He advises exploration where doubt exists, but mentions its high mortality in malignant conditions. If such be found a radical cure must be abandoned, but if other irremovable obstacles block the common duct, the gall-bladder is to be drained, preferably into the intestine.

BOOK REVIEWS.

Modern Medicine. By JULIUS L. SALINGER, M.D., Demonstrator of Clinical Medicine, Jefferson Medical College, etc., and FREDERICK J. KALTEYER, M.D., Assistant Demonstrator, Jefferson Medical College. Illustrated. Octavo, pp. 801, including a very complete index. [Philadelphia and London: W. B. Saunders & Co. 1900. Price, Cloth \$4.00 net, Half-Morocco \$5.00 net.

It has appeared advisable to the authors to combine in one volume, as far as possible, the essentials of a number of specialties, which are usually found in several volumes, but are really included in clinical medicine. In accordance with this plan, 170 pages are devoted to General Diagnosis, Physical Diagnosis, Clinical Bacteriology, Laboratory, Chemical and Microscopical Diagnosis of the Blood, Sputum, Urine, Stomach Contents and Feces.

The sections on Physical Diagnosis of the Heart and Chest are very good and include almost all practical methods. But it is very questionable whether a student can be taught physical examination by description which covers about 50 pages. Still, in connection with lectures, it may suffice.

The section on Bacteriology gives the characteristics of the more important micro-organisms and the methods of their detection. The description of these methods is too brief to teach bacteriology, but to the student or practitioner familiar with microscopical and bacteriological methods this may serve to recall up-to-date knowledge on the subject.

The section on Examination of the Stomach Contents is brief. We fail to find reference to Toepfer's test for hydrochloric acid, which is coming into general use.

The directions for making blood examinations is one of the best features of the volume. It gives Trouniet's, Fehling's, and the fermentation test to detect glucose—rather a very incomplete list. The description of the sediments found in urine is very concise and clear.

Part II contains a short description of all diseases usually found in text-books on internal medicine. Some of the descriptions are very good, particularly those on typhoid fever, malaria, pneumonia, and tuberculosis. But most descriptions are too brief for the general practitioner, at least as a reference book.

We recommend this book to students who are unable or unwilling to buy separate books on Practice, Physical Diagnosis, Bacteriology, etc.; also to the very busy physician who wants Modern Medicine outlined very briefly.

ZAHORSKY.

A Practical Treatise on Materia Medica and Therapeutics.

With Special Reference to the Clinical Application of Drugs. By JOHN V. SHOEMAKER, M.D., LL.D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico Chirurgical College of Philadelphia. Students' Edition. Fifth edition, thoroughly revised. [Philadelphia, New York, and Chicago: F. A. Davis Company. 1900.

"So many new remedies from the chemical laboratory and from the vegetable kingdom have been introduced during recent years that he [the author] has decided to divide the work into two independent issues, one the (present) to be known as the Students' Edition, and the other, which will be forthcoming shortly, as the Physicians' Edition."

This work deals principally with the official preparations, but other preparations which have a positive standing are briefly described.

After a classification of vegetable and animal drugs, the work contains a short chapter on pharmacy and prescription writing. Then follow sections on administration of medicines, Latin terms in prescription writing, and general therapeutics and classification of remedies.

The drugs are studied alphabetically, probably the most convenient and least misleading method. The usual plan is followed. The name of the drug and the synonym are followed by a description of the drug, its physiological action and therapeutic uses. The dose is usually given immediately under the drug. The official preparations are all given. Under therapy he gives a list of prescriptions—that is, practical formulæ in which the drug is used. This is one of the excellencies of this work.

The volume contains over 700 pages and holds a vast amount of knowledge concerning drugs. We believe physicians also may profit by studying this work. It is certainly one of the best students' work on materia medica. The author does not discuss opo-therapy or serum treatment in this work.

ZAHORSKY.

Medical Diseases of Infancy and Childhood. By DAWSON WILLIAMS, M.D., Lond., Fellow of the Royal College of Physicians of London, and of the University College, London, etc. Second edition, revised, with additions by Frank Spooner Churchill, M.D., Instructor in Diseases of Children, Rush Medical College, etc. Illustrated with 72 engravings and two colored plates. [Philadelphia and New York: Lea Brothers & Co.

"The object of this hand-book is to give to young practitioners of medicine, and to those who have not previously paid much attention to the subject, a guide to the clinical study of disease as it occurs in infancy and childhood."

"It has been the object of the reviser, in preparing this book of Dr. Williams' for its second American issue, to adapt it more closely to the special requirements of this country."

The book contains altogether 542 pages and is the best short treatise on pediatrics. If you want a brief, concise work on the diseases of infancy and childhood then buy this volume.

The introductory chapter deals with the growth, mortality, and general hygiene of childhood.

The chapter on Clinical Examination is full of practical directions, and shows clearly that it was written by one very familiar with the peculiarities of infants and children. We are glad to see a section devoted to retraction of the head as a diagnostic symptom. The statement that a subnormal temperature is usually due to marasmus and is a bad omen is too sweeping. Subnormal temperatures are found in certain forms of gastro-enteric infection, excessive vomiting, congenital heart disease, bronchitis, etc., and is not necessarily an ominous sign. Under diseases incidental to birth, hematoma of the sterni cleido mastoid and birth paralysis are omitted.

The chapter on Food is a clear exposition of infant feeding. Many very valuable additions have been made by the reviser, particularly a description of laboratory methods. In home modification, the apparatus known as Haas' "Materna" is recommended. It is to be regretted that the methods of modifying milk by allowing the cream to rise and taking off the upper half or upper third and commonly known as "top milk" does not receive particular consideration.

Chapter V treats in general of the Acute Specific Infectious Dis-

eases. Infants at the breast enjoy a certain immunity to these diseases. The author fails to mention certain recently interesting explanations that have been offered. One is surprised to find that he recommends the temperature of the sick room to be 56° to 58° F. This would hardly receive the sanction of American pediatricists. The usual rule is 65 to 72° F.

The infectious diseases are treated in a concise practical manner. Antitoxin is recommended in the treatment of diphtheria. The chapters on tuberculosis are very complete. The etiology as given of rheumatism is hardly up to date.

Improper feeding is given as the most common cause of rickets, and the reviser brings again prominently forward the theory of "fat-starvation."

The possibility of the Klebs-Loeffler bacillus causing noma is not mentioned, and the treatment of this disease by large doses of diphtheria antitoxin is omitted.

The author adheres to the old idea that acute coryza and laryngitis in infants is due to exposure.

The treatment of spasmodic croup is rather incomplete; antispasmodics, such as bromides and antipyrine are not given.

The diseases of the nervous system also receive attention. The article on tetany is very complete.

The most common skin diseases are also briefly described. A short appendix gives formula for various drugs, the preparation of foods, and the directions for bathing.

We must repeat that we consider this one of the best smaller works on pediatrics.

ZAHORSKY.

A Text-Book of the Diseases of Women. By HENRY J. GARRIGUES, A.M., M.D., Gynecologist to St. Mark's Hospital, New York City; Gynecologist to the German Dispensary in the City of New York; Consulting Obstetric Surgeon to the New York Maternity Hospital; Consulting Physician to the New York Mothers' Home and Maternity Hospital; Ex-President of the German Medical Society of the City of New York; Fellow of the American Gynecological Society; Fellow of the New York Academy of Medicine; Member of the New York County Medical Society, etc. With 367 illus-

trations. Third edition, thoroughly revised. [Philadelphia: W. B. Saunders & Co. 1900. Price, Cloth, \$4.50 net; Sheep or Half-Morocco, \$5.50 net.

We find on taking up this book that the plan of treating the subject-matter differs from that commonly found in works on gynecology, which gives it an individuality that is distinctive to it. The thoroughness and completeness with which each subject is treated has doubtless rendered it necessary to divide the book into two large divisions as has been done. The first is designated the general division and is devoted to a description of the development of the female genitalia, its anatomy, physiology, the general etiology of diseases of these organs, methods of examination and general methods of treatment. The chapters on each of these topics, as is characteristic throughout the book, are exhaustive. The author treats of the subject of the development of the female genitalia to an extent seldom seen in a work on gynecology. The second division is devoted to a description of the individual diseases and is called the special division. Here, too, we find the same thoroughness and completeness that characterizes the previous chapters of this work. The book is profusely illustrated. As regards the contents of the second division, it is probably as complete as can be made, nothing is left out, even the latest methods and appliances that have only recently come into use, such as the angiotribe, are embodied in the text. It is a complete and exhaustive up-to date work on the diseases of women.

DUDLEY.

A Text-Book of Pathology. By ALFRED STENGEL, M.D., Professor of Clinical Medicine in the University of Pennsylvania, etc. With 372 illustrations. Third edition. Revised. Price: Cloth, \$5.00 net; Half Morocco, \$6.00 net. [Philadelphia and London: W. B. Saunders & Co. 1900.

A review of the above work appeared in the February issue of this publication, but through mistake its title was given as 'A Text-Book of Bacteriology,' a slight error also occurred in the spelling of the author's name, which should have been Stengel instead of Stengele as it was printed in that review.

[ED.

OBITUARY.

THOMAS O'REILLY, M.D.,

Resolutions adopted by the medical profession of St. Louis on the death of Doctor O'Reilly.

We have met this evening to do honor to the memory of a professional brother, who for more than fifty years has occupied a conspicuous place in the front rank of the medical profession of this city.

The sudden death of Doctor Thomas O'Reilly, in the seventy-fourth year of his age, at noon on Sunday last, February 24, 1901, was a severe and unexpected shock to his family as well as to his numerous friends and patients.

Though feeling somewhat unwell he attended to his accustomed outdoor duties the day before his death with his usual energy and fidelity, and on the day following, apprehending no danger, though confined to his bed, he occupied himself in giving directions concerning his patients up to a brief period before the summons came—so that he literally died in harness, in the discharge of his professional duties, as was oft his expressed desire.

Doctor O'Reilly was born, and educated in Ireland in the celebrated Dublin School of Medicine. In early manhood he immigrated to the United States, and in 1849, settled in St. Louis where he soon acquired a large and lucrative practice, which knew no diminution up to the day of his death. It is not too much to say that, during this long period, he daily prescribed for a larger number of patients than any single physician in the city, always retaining the unbounded confidence and esteem of his constituency.

Well educated, of strong native intellect, of vigorous bodily health, coupled with indomitable energy and industry, he accomplished an amount of labor which few men could have endured. In this regard he presented a typical example of the all-round general practitioner of medicine of the old school. With full confidence in medicine and his own ability, he succeeded because he deserved success.

In his intercourse with his professional brethren Doctor O'Reilly was kind, courteous and considerate, but he was far too busy a man

to spend any considerable amount of time in mere social amenities.

A native of Ireland, he cherished the very warmest attachment for the land of his birth, and was always prominent in promoting and sustaining any cause which looked to the well being of her people. But whilst this was the case, he also dearly loved the land of his adoption, was proud of her free institutions, and was ever ready and willing to lend a helping hand to every enterprise which tended to the welfare of the community in which he lived.

In the death of Doctor O'Reilly the medical profession has lost an honorable and useful member, the public, a good citizen.

To his bereaved widow and family we tender our united and sincere sympathy in the irreparable loss which they have sustained.

Resolved, That a copy of these proceedings be engrossed and sent to the family of the deceased, and that they be published in the lay and medical press of the city.

WM. M. MCPHEETERS,

L. E. NEWMAN,

A. C. BERNAYS, Committee.

Division of Fees Discredited in Chicago.—The question of the propriety of division of fees between the medical consultant and the surgeon has been agitated by the profession in Chicago. At the meeting of the Chicago Medical Society of January 23, 1901, the following resolutions were unanimously adopted:

Resolved, That the offering or giving of a commission, or percentage of a fee, by the consulting physician or operating surgeon, or the asking or receiving of such a fee or commission in any guise whatever by the physician referring the case, is dishonest, disreputable and unethical, unless such an arrangement be made with the full knowledge of the patient.

Resolved, Further, That a violation of this resolution shall subject the offender to expulsion from the Society.

A resolution was also adopted to the effect that the fees ordinarily received by the attending physician in connection with cases requiring surgical operations in common practice are not adequate, and that the physician should have the support of the Society to increase his charges under such circumstances.

NOTES AND ITEMS.

As Others See It—From a Distance.—The *N. Y. Medical Record* of February 2, says that the pessimistic prophesies with regard to the Chicago Drainage Canal have not been fulfilled, and that the contention of St. Louis that running water does not purify itself, has been effectually and emphatically demonstrated to be untrue, and that the quality of the water is improved. Evidently the editor has been reading some of Chicago's literature.

The Excellence of the St. Louis Naval Recruits.—Surgeon R. P. Crandall, of the United States Navy, who has been the examiner at the recruiting station in this city, states, in a recent interview in the daily press, that he considered St. Louis to be the best recruiting station in the country. He had never before seen such a fine lot of young men as was found here. More than 40 per cent of the applicants were accepted, while in many of the Eastern cities it had been found impossible to accept as many as 10 per cent.

Another Cheap Medical Service Scheme.—According to the *Journal of the American Medical Association* a *pro forma* decree of incorporation was denied the Red Cross Medical Association by Judge Fisher, of this City, on January 23. The referee, to whom the matter was referred, reported that the statute under which the concern sought to incorporate contained no provision for the incorporation of a medical society. The purpose of the Association was to supply members with medical treatment on their paying monthly dues.

Use of Cream of Tartar Prohibited.—A measure has been introduced in the Legislature of Arkansas prohibiting the sale of bitartrate of potash either alone or in combination with bicarbonate of soda for the purpose of aerating, leavening or otherwise preparing food

products. A fine of \$500, and six months imprisonment is imposed for violations. This is undoubtedly a measure introduced by the opponents of the baking powder trust in retaliation for many similar acts introduced in the legislatures of other states by the trust against the use of alum in the manufacture of baking powder.

Phonetic Spelling Rejected.—At a recent meeting in Chicago the school superintendents of the National Education Association, by a decisive vote refused to allow the subject of phonetic spelling to be taken under consideration by a committee of the best-known educators of the country. A lively discussion preceeded the vote. One member characterized the spelling reformers as humbugs, and stated that what they proposed was not reform but a mere freak of abbreviation. Instead of a reform in the spelling of the English tongue, what was needed was a reaction against the failure to teach spelling in our schools.

The Incomes of Physicians.—Dr. A. K. Steele, in a paper read before the Chicago Medical Society, states that there is an unusual amount of ignorance both on the part of the public and of the profession regarding the incomes of physicians. Professional incomes are greatly overestimated. The income of the average physician in Chicago varies from \$1,500 to \$3,000 per annum; office specialists—eye and ear, nose and throat—average \$2,000 to \$6,000; consulting physicians, \$5,000 to \$15,000; six leading physicians, \$15,000 to \$35,000; six leading surgeons, \$20,000 to \$60,000; six leading gynecologists, \$10,000 to \$20,000; six leading office specialists, \$10,000 to \$15,000; average surgeons, \$3,000 to \$10,000. The practitioners in Chicago whose income from practice exceeds \$30,000 per annum can be counted on the fingers of one hand, and probably not more than a score exceeds \$20,000 per annum. The two- to three-dollar visit, the five- to twenty-five-dollar consultation, the ten- to thirty-dollar case of obstetrics, and the larger fees provided for operative work in the fee table do not insure large incomes for many in the profession. The expenses of a physician keep pace with his increasing business so that the opportunity for accumulating wealth is not easy.

ST. LOUIS

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No. 4.

ORIGINAL CONTRIBUTIONS.

The Mesogastrium—Omentum Majus.

**From the Autopsic Abdominal Inspection in Three Hundred
Males, One Hundred and Fifty Females and
Sixty Children.**

By BYRON ROBINSON, B.S., M.D.,

CHICAGO, ILL.

THREE thousand six hundred years ago the cunning Egyptian priests told fortunes by the omentum. It was a mystery to them, and the more mystic a subject the more it is worshipped.

Hippocrates (460 to 385 B.C.) thought the omentum regulated the amount of fluid in the peritoneal cavity.

Aristotle (384 to 322 B.C.) claimed it to preserve the innate heat of the body.

Malpigi (1628 to 1694) considered the omentum as the cause of ascites and as a store-house for fat.

Other theories followed not worthy of note—simply mystic imaginations. In 1870 Dr. Landgraf, a country practitioner, argued that the omentum was the cause of ascites from the fact that after a hernia of the omentum which sloughed off its distal extremity the patient recovered from many months of ascites.

One theory arose that the omentum is so variable in size that it was useless and fading out. I oppose the idea that it is so extremely variable in size, and if it be fading out it is a very gradual process, a view I gained from examining numerous kinds of animals from fish to man.

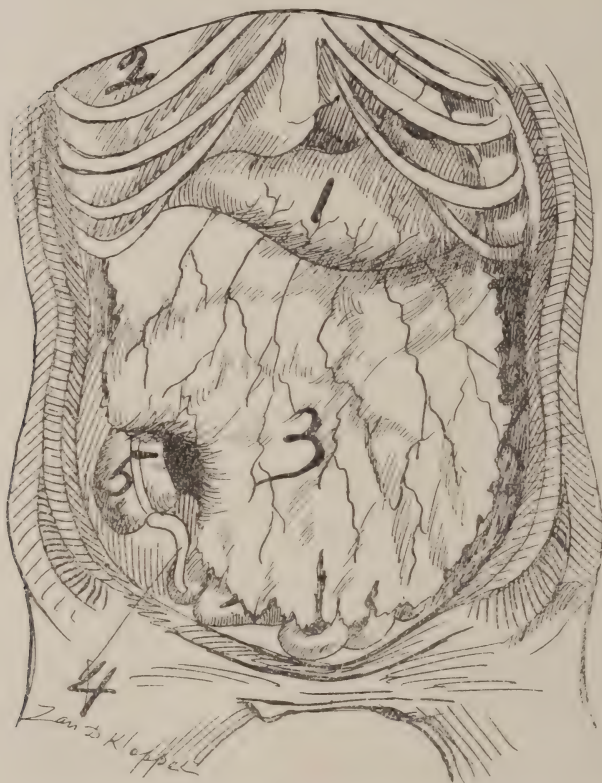


FIG. 1.—(Author). 1, Stomach; 3, Omentum; 4, Appendix; 5, Omentum projected off the cecum by the contraction and dilatation of the cecum. This form of omentum is not common unless it be fat. The appendix covered by omentum makes appendicitis comparatively safe.

LOCATION OF THE OMENTUM.

In over five hundred autopsies the omentum was found located chiefly in the following region:

1. Lying distal to the umbilicus spread over and anterior to loops of enteron and tending mainly to the left.
2. It lies rolled up distal to the transverse colon.
3. It lies rolled up and proximal to the transverse colon.
4. It lies between the liver and hepatic flexure of the colon.

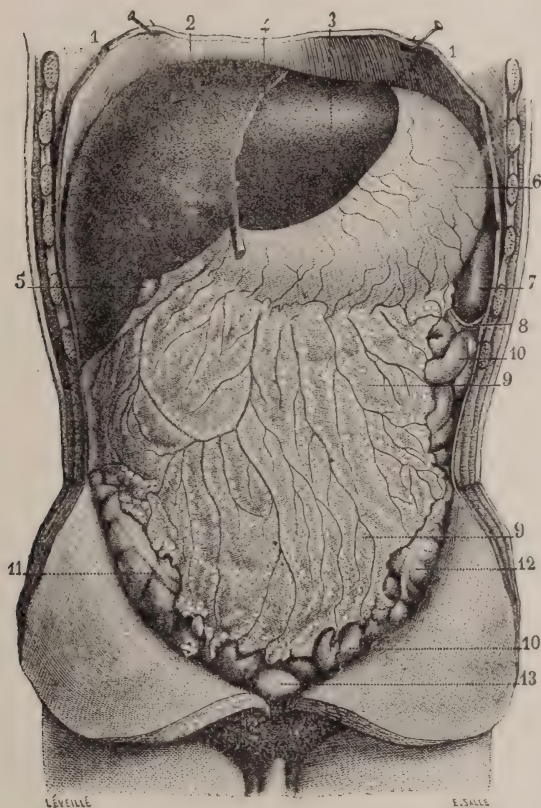


FIG. 2.—(Sappay, 1889). Represents the front view of the great omentum. It is unusually well spread out and quite symmetrically located, it shows well the relations of the great omentum to the surrounding organs, especially the three great peritonitic regions, viz., gall-bladder, appendicular and pelvic. It does not cover the cecum, nor does it reach into the pelvis, nor cover the top of the gall-bladder; 13, Summit of bladder; 12, Sigmoid; 10, Points of loops of enteron.

5. It may be among the coils of the enteron, invisible on opening the abdomen.

6. It covers the cecum, perhaps, in 15 per cent of male and 30 per cent of female subjects. The position of the omentum is influenced by lying on the back previous to death.

7. The omentum, when well padded with fat, lies unfolded between the anterior abdominal wall and the posterior abdominal viscera. The omentum is located more on the left than the right side because (*a*) it possesses more adhesions to the spleen than any other abdominal viscera; (*b*) the peristalsis of the enteron forces it to the left; (*c*) the omentum is developed on the left side and the greater curvature of the stomach, lies more distal than the pylorus.

8. It passes distally into the pelvis in at least 25 per cent of male and 50 per cent of female subjects. Its right border frequently extends proximally on the right colon to the cecum, whence it is called "Haller's Omentum." Its variability in position chiefly depends on peristalsis of bowel, distention of adjacent viscera and inflammatory adhesions. In the lower animals it is more regular in position.

THE SIZE OF THE OMENTUM.

In some humans the omentum is so large that one can only see the anterior surfaces of the liver and stomach with the abdomen widely opened. In over five hundred personal autopsies, inspections of the abdomen and witnessing of many more, I never saw the mesogastrium absent. In many cases I saw it atrophied to small, irregular projections or tags. Its size chiefly depends on: (*a*) deposit of fat, (*b*) inflammatory adhesions, producing contractions of tissue, and (*c*) violent and disordered intestinal peristalsis rolling it on itself. In the lower animal, as bovines, ruminants, carnivora, rodents and monkeys, the omentum is more regular in size. The "apron protective heat theory" must be abandoned, as facts are against it. For example, when the abdomen is the thinnest the omentum is the thinnest. This should be exactly the opposite. I found that the seal had a very thin, quite fatless mesogastrium, which had no connection to the transverse colon, and the 80 feet (in a 200-pound seal) of enteron had, by its peristalsis,

forced the omentum to lie chiefly along the greater curvature of the stomach. If any animal required an omentum to keep its viscera warm it would be the seal.

COMPARATIVE ANATOMY OF THE OMENTUM.

The pleuro-peritoneal cavity becomes separated into pleural and peritoneal cavities in mammalia. In examining personally nearly one hundred different species of fish I found that a partial omentum (mesogastrium) or its equivalent frequently occurred.

Investigators among fish claim the *gobiesox* (the clingfishes of the West Indies) has a well-developed omentum. In many fish the stomach projects distally in the body almost to the anus and it is held to the duodenum and enteron by a broad band of peritoneum, equivalent to the human omentum. The sea-raven (*hemitripterus*) has, according to my dissections, a distinct omentum majus produced by the projecting spleen and since the spleen appears to have an influence in producing the omentum the lizards will possess an omentum. The spring skate (*batides-elasmobranchii*) has an omentum. The catfish and bass show a great peritoneal sac or cavity between the distally projecting stomach and the duodenum and enteron. Many fish, like the spot (*leiostomus xanthurus*), lake trout (*salvelinus namaycush*), weak fish (*cynoscion*), the sea-robin (*prionotus strigatus*) show a large peritoneal pouch between the stomach and duodenum containing the spleen. These cavities are made of peritoneal membranes extending from the stomach to some other viscus and are equivalents of the mammalian omentum. Because in fish the stomach assumes generally a position longitudinally with the body. Other fish, like the carp, have really no peritoneal cavity, the whole tractus intestinalis is buried in the connective tissue about the liver. On opening the abdominal cavity one only observes great fields of snow-white connective tissue; intraperitoneal bands fix the viscera to the abdominal wall. Animals (and it is reported of man) can live without the peritoneum. Nearly all of the higher fish possess a mesogastrium. It may be perforated, defective, and it does not elongate to such an extent as it does in mammals, on account of the shape of the body cavity, the

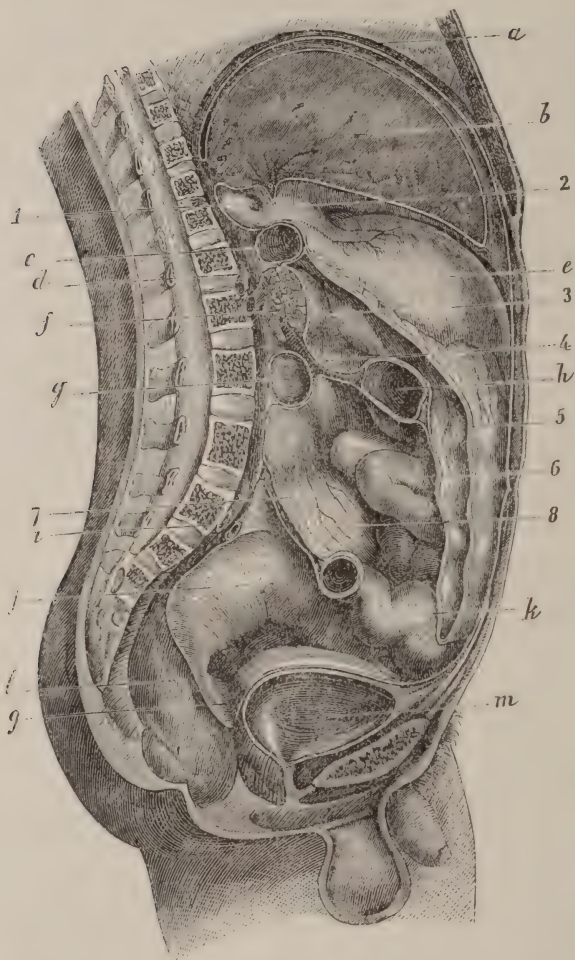


FIG. 3.—(Forabeuf). Represents a beautiful profile view of the great omental bag; it is worthy of careful inspection. It is drawn in vertical section in the middle line; *a*, Diaphragm; *b*, Liver; *c*, Duodenum; *d*, Renal vessels; *e*, Anterior surface of the stomach; *f*, Pancreas covered by the ascending or superior blade of the transverse mesocolon; *g*, Inferior transverse colon; *h*, Colon transversum; *i*, Iliac vessels; *j*, S Iliac; *k*, Small intestine; *l*, Rectum; *m*, Bladder. 1, Winslow's Foramen (orificium epiploon, foramen bursa omentalis minus or hiatus Winslow); 2, Gastro-hepatic omentum, lesser omentum or ligamentum gastro hepaticum; 3, the lower blade of the lower omentum cavity, or the upper blade of the mesocolon transversum ascending over the pancreas; 4, Mesocolon transversum; 5, anterior or descending blades of the great omentum (the part below the colon Huschke called the omentum colicum, and the part between stomach and colon the gastro-colic omentum) 7 and 8, point the upper blade of the mesenteron.

small size of the spleen and the fact that the liver grows distally on each side of the stomach. The stomach does not rotate except in the higher fish. The peritoneal membranes extending between the pyloric ceca of fish has nothing to do with the omentum (mesogastrium) for the pyloric ceca are the

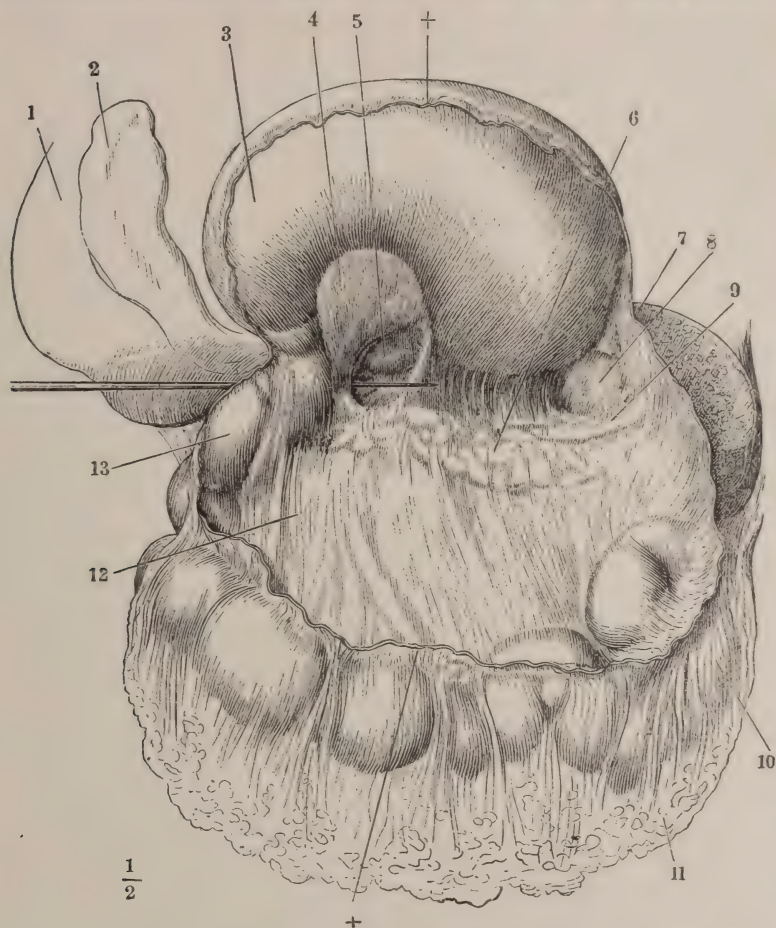


FIG. 4.—(Henle). Represents the interior of the lesser omental cavity with a part of the greater omental cavity. The anterior wall of the omentum is cut away along the line marked + +, *i. e.*, along the greater curvature of the stomach and colon transversum. An arrow passes transversely through the Foramen of Winslow; 6, Pancreas; 7, Spleen; 10, Colon transversum; 12, proximal blade of mesocolon transversum.

precursor of the pancreas as is well marked in the shovel-nosed sturgeon (*scaphyrhynchus platyrhinus*).

In reptiles the enteronic loops are often united by connective tissue and, on account of the narrow, elongated abdominal cavity, the stomach develops distally, allowing no gastric rotation and, hence, the mesogastrium is not elongated. In both birds and reptiles as well as in the horse several intestinal loops may be folded in one coat of peritoneum.

Birds possess omenta, but not like that of mammals, on account of the pleuro-peritoneal cavity and the visceral relations. Equivalents of the omentum in the anatomy, physiology and pathology of the peritoneum occur in the fish and in birds, but the enormous mesogastrium (the omentum majus) practically occur in the mammals only, due to (a) large liver development, (b) gastric rotation, and (c) to splenic development. However, since mesenteries or peritoneal membranes are chiefly characterized by vascularity (blood and lymph) the same principle holds throughout the vertebrates, from fish to man. Peritoneal appendages, omenta, appendices, etc., are abundant from fish to man. The omentum majus (mesogastrium) is constantly present in mammalia. It is strikingly large and prominent in carnivora, in pachyderma, quadrumana, rodentia and ruminantia. When one observes the large square omentum majus of the cat or dog (carnivora) and the gopher, coon, rat and squirrel (rodentia) an impression arises that it is made for some definite purpose.

In adult man the omentum coalesces with the colon transversum. In the human fetus and all lower mammalia the omentum majus and the colon transversum scarcely coalesce; in other words, there is no omental attachments to the transverse colon until the scale of quadrumana and bimana is reached. Lumbar omenta occur in the rodentia and marsupials. In the carnivora, as the dog and cat, the omentum majus encloses the enteron and colon like a veil, and during inflammation invasion is a wonderful protection. The omental fold of the rabbit (rodentia) is an expansive blade loaded with fat, extending distally to the pelvic floor and well enveloping the tractus intestinalis. In the ruminantia the omentum stretches over the compound stomach like a sheet. The beautiful extensive

omentum of the sheep, elegantly streaked with fat and intimately covering the intestines is well known to all observers of butcher shops. A curious comparison exists between the peritoneum of the horse and carp-sucker (*carpiodes carpio*)—in the carp several segments of the intestine will lie between two blades of peritoneum; in the horse two bowel loops will be supplied and held in position by one blade of peritoneum. The omentum is reported very small in whales (*cetacea*), an order of marine mammals which, doubtless, were once land mammals and for some still unknown reason again returned to marine life.

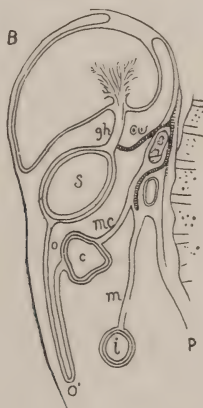


FIG. 5.—(Thompson). *s*, Stomach; *mc*, Mesocolon; *o*, Great omentum; *m*, Mesenteron of enteron; *c*, Colon; *p*, Parietal peritoneum; *i*, Enteron; *gh*, Gastric-hepatic omentum. This figure represents the adult condition of the peritoneum, and in the next figure I wish to show how the peritoneum develops from the fetal to the adult condition.

THE COMPARATIVE DEVELOPMENT OF THE OMENTUM.

The real discoverer of the exact development of the mesogastrium was J. F. Meckel in 1817. However, the celebrated investigator, Johannes Müller, wrote an accurate and attractive account of the development of the mesogastrium in 1830, and has generally been accredited as its discoverer. A careful reading of Meckel's article in his own *Archives* will

convince any investigator who was the first at least to accurately describe the omentum majus in its evolution.

The fetus and adult state of the omentum in man differs. In adult man the omentum has direct or coalesced conditions with the whole transverse colon; the fetal state of the omentum in man resembles that found in nearly all of the lower mammals, the best common examples are those of the dog and cat where the omentum and transverse colon practically have no relations or coalescence. The attachment or coalescence of the omentum to the transverse colon is a matter of



FIG. 6.—(Author). Shows the fold of peritoneum *d*, against the dorsal wall; *s*, Stomach; *c*, Colon; *i*, Enteron. The object of the diagram is to illustrate how the fold *d*, descends to allow the transverse colon to finally lie between the mesocolon as in Fig. 1c

development subsequent to fetal life. The signification of the omental attachment to the transverse colon is not clear, except it be for fixation purposes in the erect attitude. The active factor in the coalescing is the proximal end of the colon and right movement of the cecum in its extensive post-fetal development. The proximal end of the colon (the cecum) travels in its growth until it comes in direct contact with the left peritoneal blades of the mesoduodenum whence it appropriates it for its covering. The duodenum is finally left with no peritoneal mesentery—of course the duodenum always must possess the mesenterii membrana propria necessary for nourishment. It is true the mammals below adult man live without omental attachment to the transverse colon, but the cecum of

such mammals does not travel so far in its journey to its final home in the right illiac fossa. There is a visceral evolution of mammals yet to be worked out. If the position of man's viscera and peritoneum be considered the most highly differentiated it must be conceded that the nervous, muscular, skeletal and visceral system do not develop in direct and simultaneous proportions. If we take a man's viscera as a standard (*i. e.*, the mammal having the omental connection with the colon and cecum located in the right iliac fossa), it will be found that the turtle's viscera is nearer to man than that of the dog, cat, or even the lower monkeys. The turtle's cecum is in the right iliac fossa, *i. e.*, well rotated distally in direct contact with the mesoduodenum. The cecum begins to direct itself distally and forms distinct omental relations. The turtle has a well-marked transverse colon, but like carnivora (cat, dog) has no sigmoid loop in the colon. The recto-duodenal fold begins in the turtle and ends in the fossa duodeno-jejunalis of man.

The great factor that changes and complicates all the visceral and peritoneal positional relations in higher mammals is the relation of the cecum (the proximal end of the colon) to the left surface of the mesodeodenum. The omental attachment to the transverse colon does not appear to be of special importance, for the mesocolon retains its primitive mesocolon.

The gradual approach of the proximal end of the colon to the left mesoduodenum until the cecum (proximal end of colon) coalesces with the mesogastrium (omentum) announces the connection of the transverse colon and omentum as observed in the primates and completed in adult men. As the larger size of the liver at first forces the stomach to the left and rotates it horizontally, and lastly as the shrinking liver drags the distal end of the stomach (pylorus) to the right omentum majus (the mesogastrium) gradually elongates into enormous surface dimensions until in carnivora, rodentia, rudimentia, quadrumana, and man, its middle point will extend to the pelvis. The abundant excess of development of the mesogastrium, the wondrous overgrowth of the omentum majus is not equaled by any other organ in the animal economy. It is especially late in development and is perhaps completed in two years after birth (man). The enormous development of the mesogastrium

appears to indicate that it was intended for some great purpose in mammalian life. If the great mesogastrium had been evolved for some purpose and that purpose was fulfilled, it could not be considered as of any present practical value and that it was fading out of existence. But fading organs die with a long hard struggle, and since their cells, from lack of nourishment, are devitalized and do not resist pathogenic microbes they sacrifice numerous individuals from trauma, infection or malignancy. How many individuals have succumbed to disease of the fading appendix, the thyroid duct, the mesonephros, and

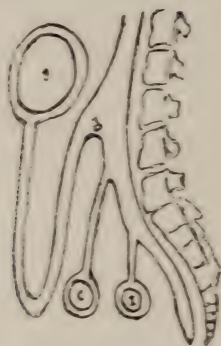


FIG. 7.—(Author). Shows the fold of peritoneum; *d*, Gradually being drawn out from between the layer of omentum and mesocolon; *s*, Stomach; *c*, Colon; *i*, Enteron. The fold *d* is being gradually displaced and not coalescing with its adjacent layers.

the branchial clefts? Non-vital cells of vestigial or fading organs invite pathogenic microbes or malignant growths. Is the mesogastrium a feeding organ? It is true it contains, in the adult, atrophic fenestra, defects, which shows that some portions have and are disappearing. But so also has the mesogastrium of the yellow perch (*perca flavescens*), atrophic fenestra—defects. Large apertures may be found in the mesogastrium of the perch, but there is always ample structures, especially of the mesenterii membrana propria, left intact to transmit vessels, lymph channels and nerves; in short, the neuro-vascular visceral pedicle always remains. The mesogastrium of yellow perch will never become extinct, despite its mechanical or atrophied defects. If the mesogastrium be fading out it

is extremely gradual, for its present great characteristic is vascularity. Fading organs kill their victims mercilessly—as the appendix, mesonephros, brachial clefts. The mesogastrium is absolutely a life-saving organ and numbers its triumphs by saving thousands annually. The omentum does not act like other fading organs. Besides has condition in mammalia life so changed that it needs to fade. Is not the same factors extant that were existing when mammalian life sprung into activity? If the omentum majus (mesogastrium) be fading, it must have been made for some other purpose. With careful



FIG. 8.—(Author). Illustrates further progress in displacing or dragging out of the fold *d*.

study of visceral development it is noted that the mesogastrium developed step by step with mammalian development, and no one organ now or anciently present accounts for its appearance or disappearance. The three organs associated with the development of the mesogastrium are the stomach, liver and spleen. I have examined the viscera of nearly one hundred species of fish, examples of lizards, snakes, turtles, frogs, birds, rodentia, solipeds, carnivora, ruminantia, pachyderma, quadrumana, and bimana, and the factors in the development of the mesogastrium (omentum majus) are: 1. Hypertrophy. 2. Atrophy of the liver (in the sense of growth). 3. Rotation of the stomach. 4. Horizontal position of the stomach. 5. The gradual enlargement of the spleen and its left-sided position. 6. The erect attitude may explain some of the developmental

relations and attachments of the mesogastrium to the transverse colon. The erect attitude brought about many visceral changes—as visceral ptosis, dilatation of the duodenum and stomach from pressure of the superior mesenteric artery, vein and nerve on the transverse segment of the duodenum. If the mesogastrium were an organ of limited existence of life like the genitals it would have been produced by some factors either once active or yet active. This may have been and is now the case with the hypertrophy and atrophy of the liver in rotating the stomach and the force may have been progres-

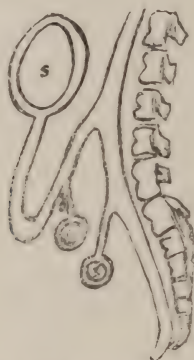


FIG. 9.—(Author). Shows the fold, *d*, almost entirely drawn out or displaced. It is the stage just preceding the one where the transverse colon lies in the mesocolon through displacement or re-adjustment and not coalescence.

sively constant as it has been with the gradually increasing size of the spleen, which must be supplied with blood-vessels and they project peritoneal folds. The omentum majus has, of course, no limited life like the genitals—as the quiescence of childhood, the rapid development at puberty of the spiral segment of the utero-ovarian vascular circle and its complete development through gestation and atrophy, of senility. This is simply the utero-ovarian vascular circle passing through its age and functional relation. The mesogastrium has but one age relation and that is its post-fetal attachment to the transverse colon. Its function relation remains constant throughout life. The anatomic facts in the case of coalescence of the mesogastrium with the transverse colon consists in the fusion of the

proximal blade of the mesocolon with the mesogastrium.

I examined one dozen monkeys' abdominal viscera among which were four with large collosities, *i. e.*, who sat or stood erect almost all the time, and in the dozen instances the omentum extended distally to the pelvic floor. Every abdominal viscus was covered anteriorly by the omentum except the stomach and liver. In the monkeys, or rather apes, with collosities—that is, those who sat or stood erect, the omentum majus was just beginning to form a union with the right end of the transverse colon, but such connection did not produce rolling the omentum along the transverse colon. In children at birth, and for two years later, the omentum is very frequently rolled along the colon transversum. It is well known that children suffer extensively from colic—disordered peristalsis. The frequent contraction and dilatation of the transverse colon and gastrium coaxes the omentum proximally, hence it appears to me that it is the extensive connection of the omentum with the transverse colon that induces the dragging of the omentum proximally along the colon and gastrium.

THE STRUCTURE OF THE MESOGASTRIUM (OMENTUM MAJUS).

The superficial peritoneal layer is developed locally by delamination of the mesoblast, not by any specialized tissue. In examining the embryos of turtles it appeared to me that the flat endothelial cells became so by stretching—by being flattened and thinned out—in order to cover subserous growing tissue. The omentum in general consists of a trabecular system of fibers, containing connective tissue fibers, blood-vessels and nerves, all covered completely by a layer of flat endothelial nucleated cells. By applying AgNO_3 , 1 part, and H_2O , 400 parts, to the fresh omentum under the influence of sunlight, irregular dark inter-endothelial lines appear. It is a precipitate of albuminate of silver in the inter-endothelial space. On the inter-endothelial line found at the common junction of several endothelial cells is located a stoma verum which is lined by granular, nucleated polyhedral protoplasmic cells. The stoma spurium is also located on the inter-endothelial line. The number of stomata vera et spuria are relatively limited on the omentum majus. Its surface is not an absorptive area, but a

benign peritonitic area. The enteronic area is an absorptive or dangerous area of peritonitis. It is a resistant area of infection, like the colonic area. Its lymphatics are also relatively limited. Its limited stomata, lymph-vessels and vast amount of fibrous connective tissue bundles make it the most useful weapon of peritoneal defense because it not only is a benign area of peritonitis resisting the absorption of infection, but is like a man-of-war ready at a moment's notice to check infectious invasion in any of the peritoneal parts—as the proximal



FIG. 10.—(Author). Represents the final adult condition of the omentum; *i. e.*, the transverse colon, *c*, now lies between the blades of the mesocolon, or in other words, between the layers of the secondary mesogastrium. The peritoneal folds and pocket connected with *d* have disappeared.

apertures of the oviducts, the appendix, and gall-bladder. The dangerous areas of peritonitis are the diaphragmatic peritoneum and the enteronic peritoneum, because these areas contain the chief stomata and the vast lymph districts with vigorous powers of absorption. The benign areas of peritonitis are the colonic and omentum majus, because the stomata and lymph supply are relatively limited in these areas. Hence, the non-absorptive capacity and the mobility of the omentum makes it the chief defender of the peritoneum.

Serous membranes are lymphatic organs. In most parts of the body where serous membranes supply and serve important organs they possess omenta. The stomach possesses three omenta which attaches it to the spleen, liver, and colon.

The omentula of the colon—the appendices epiploicæ—are wonderful defenders to protect the colon against fatal infection. Curious enough, the gastro-colic omentum takes the place of one row of transverse colonic omentula. In the brain these are the “cerebral omenta,” which consist of the arachnoid with its fringes—as the choroidal plexus. This plexus, a vast vascular area of lymph and blood-vessels, floats in the ventricular fluid. It doubtless has much to do with the secretion of serous fluid and the regulation of its quantity in the ventricles—as the mesogastrium (omentum majus) does in the peritonevm.

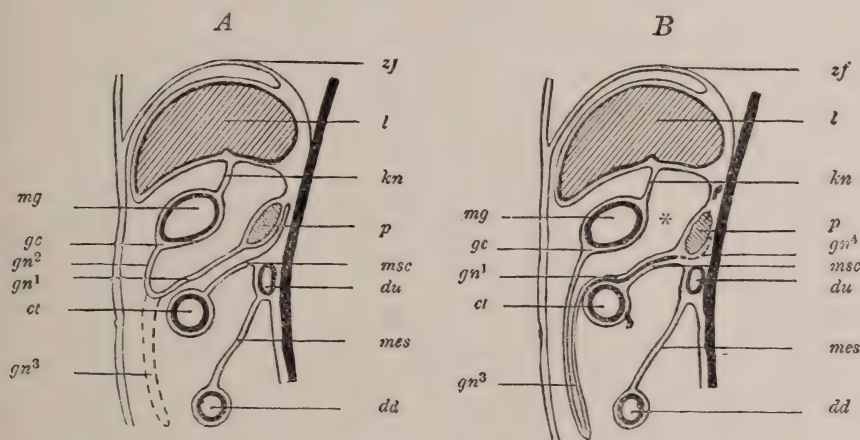


FIG. 11.—(Hertwig). A diagram to illustrate the development of the bursa omentalis. *A*, Earlier, and *B*, Later stage; *l*, liver; *zf*, Diaphragm; *kn*, Gastrohepatic omentum; *mg*, Stomach, pancreas; *mse*, Mesocolon transversum; *ct*, Colon transversum; * Bursa omentalis; *gn*, Posterior lamella of the great omentum arising from the vertebral column; *gn²*, Anterior blade or lamella of same attached to greater curvature of stomach; *gn³*, The part of the omentum which has grown over the anterior (*dd*); *gn⁴*, The part of the omentum which encloses the pancreas; *mes*, Mesenteron; *du*, Duodenum; *gn³* is the distally elongated mesogastrium.

The omentum majus is composed of the mesogastrium doubled upon itself, and hence consists in early life before fusion or coalescence of its blades of four peritoneal layers. It had better be said that the omentum majus—a mesogastrium—

was produced by certain forces than that it was created for certain special purposes. Located around the great visceral blood trunk or celiac axis and fixing the most anciently important digestive organ—the gastrum—it is naturally extremely vascular. It almost looks like the abdominal lung of a necturus projecting distally in the abdominal cavity. Vast channels of blood and lymph spaces exist in the mesogastrium divided from the peritoneal cavity mainly by a single layer of endothelial cells, hence exchange of fluid between it and the general peritoneal cavity is accomplished by slight mechanical difficulties. The statement that the mesogastrium is the most highly peculiar lymphatic segment of the peritoneum is untrue, as that characteristic belongs exclusively and pre-eminently to the diaphragmatic peritoneum where stomata vera, lymph capillaries and channels, vast lymph beds and spaces wonderfully abound. This must be the case where it can be demonstrated that a dog will absorb 10 per cent. of his body weight of fluid in the peritoneum in half an hour, when it is also demonstrated that the chief peritoneal stream is toward and through the diaphragm.

(To be Concluded.)

Pott's Disease of the Spine.—Diagnosis and Treatment.

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NOT all cases supposed to be such are always Pott's disease. Deformity similar to that caused by tuberculosis of the spine is seen following absorption from the Pyerian patches of the intestines in typhoid fever. This condition would be readily discovered in connection with a history of other typhoid symptoms. Another rare affection of the spine result-

ing in kyphosis is caused by the inoculation of the germs of actinomycosis. We also recognize another condition closely simulating tuberculosis infection in acute osteomyelitis. This, however, differs from the more common condition by its rapid onset and virulent and destructive course in marked contrast to the insidious approach of tuberculosis, sometimes covering months and months.

The germs of osteomyelitis will do in a few days what tuberculosis, as a rule, will not accomplish in many months.

These four conditions, each distinct, yet resembling one another in a few general symptoms, are commonly classed together as "Pott's disease."

The etiology of true tubercular spondylitis is due to an infection of the bacilli tuberculosis into an area of previous inflammatory action. This theory was taught by Phelps in this country and by Billroth on the Continent some years ago, and is now the one generally accepted the world over. That the bacilli inoculate tissue not embryonic is impossible. The result is a slow growth of tubercular tissue. As the area of inflammation extends, inoculation takes place with destruction of bone. This was formerly known as caries, which is a term that means nothing and will eventually be dropped from the nomenclature of the subject.

The germs of tuberculosis enter the system primarily, as a rule, through the lymphatics. A child playing in the back yard of a tenement house, in an atmosphere contaminated by germ-life caused, possibly, by beating carpets from an infected room, where an individual had died of tuberculosis or osteomyelitis, inhales the spores of the germ.

These spores are immediately absorbed by the lymphatics from the mucous membrane of the pharynx and the trachea and carried to the neighboring lymphatic glands. The lymphatic glands are rich with cells and are a good soil for the reception and growth of the germs. The cells or phagocytes of the lymphatic glands are at once attacked by the germs and destroyed, until the entire gland is converted into a pus or tubercular cavity, depending upon the kind of germ absorbed. These are the large glands seen in the necks of children and called by the older authors "strumous or scrofulous gland."

Ulceration now commences in the gland, burrowing takes place in the direction of least resistance. The gland is surrounded by a vascular net-work of veins and arteries. When perforation of the gland takes place from ulceration, its contents may discharge directly into the blood-vessel; thus it can be readily seen how the circulation becomes contaminated with germ-life from the reservoir which is constantly discharging into it. Now if the child playing in the back yard receives a slight injury of the spine, at once inflammatory action begins at the point of lesion already described. The blood being loaded with germs of infection carries them to the point of injury. The pathogenic germs finding a fit soil for their reception and growth attack the normal new inflammatory material and convert it into a diseased condition, with a formation of pus or a tubercular abscess. From this point of local infection the pathogenic germs find their way into adjacent tissues, destroying them as they advance and enlarging the diseased area. Should the body of the vertebræ be involved, as is the rule in the majority of cases, its partial destruction is simply a matter of time, *unless* the destructive process is checked by appropriate treatment, the focus of disease circumscribed, and ankylosis of the affected vertebræ accomplished.

Why it is that one child may receive a blow, but will not develop the disease, while a second child also receiving an injury will develop it, is an interesting question. It depends on the relative disease-resisting power of the cell-life of the individual.

In case of tuberculosis of the spine the surgeon should always make a diagnosis before deformity occurs. To do this in a child only a year and a half old is sometimes difficult.

In these cases, as a rule, there will be night cries; screaming of the child when the mother lifts it; bending forward of the body elicits pain anteriorly from the point of disease; the patient placed upon its back when lifted to an upright position with the hand under the head rises with a rigid spine; patient in the sitting position and viewed from behind will present a rigid spine when bent from side to side; if the disease is located in the lumbar region the patient may have been treated for worms; if in the dorsal region, for asthma. But when the

symptoms enumerated are present, although there is no deformity as yet of the spine, a diagnosis of Pott's disease can be made. If the spine is flexible in its continuity, there is no Pott's disease; if rigid, it is certain to be present.

The patient must be supported so as to produce stable equilibrium. A child of three years or younger can not be properly *braced*, because the pelvis is too small as compared with the thorax, and the brace will slip. Put on a Bonet's cuirass, or better, Phelps' plaster-of-Paris portable bed, which is good also in Pott's disease and hip disease. Dr. Phelps got the idea from an Indian squaw carrying her baby. In spinal braces, where the band around the pelvis is narrow and small, they will tilt. I believe suspension and then fixation is necessary. This is the principle of one brace invented in 1754. The Hessing corset was invented in 1764. Many apparatuses modernized were used more than a century ago. Sayre was the first man in this country to make a suitable apparatus for Pott's disease—the plaster-of-Paris corset. It is good, but it has objections—it is heavy, cumbersome, unclean, and it wears out and so changes have to be made; but it is the best of all braces. Then there is the substitution of other materials for plaster-of-Paris, such as leather and cowhide, which proved non-available, and wood, wire, celluloid and paper, none of which are of any value in these cases. A spinal support must be absolutely unyielding or it is entirely useless.

If the disease is located above the third dorsal vertebræ, no corset or brace without the aid of the jury-mast can be adjusted so as to be a support, owing to the fact that the weight of the head and shoulders operate upon the point of disease or curve. In such cases the jury-mast should always be so adjusted as to transmit the weight of the head through the corset to the hips.

To make proper corsets from plaster-of-Paris, suitable material must be used. I use a special crinoline known as No. 100 hospital crinoline. It has the proper amount of sizing and material and a total absence of indigo. The plaster-of-Paris must be of good quality and fresh. This cloth and plaster-of-Paris, when properly united, makes a perfect plaster bandage. Tear the crinoline into strips six inches wide and

six yards in length; draw the cloth over a pile of plaster-of-Paris on a table, and with the hand rub off all excepting enough to simply fill the mesh of the cloth; roll the bandage loosely, that it may take water quickly, and it is simply perfection. A tight-fitting shirt must be adjusted to the patient and must fit perfectly. The life of an ordinary jacket made of plaster-of-Paris is about three or four months. They last longer in cool weather than when the patient is freely perspiring in summer.

When a patient is suspended in Pott's disease of the spine, and a jacket properly adjusted, he is at once relieved from a condition of pain and suffering, and to such an extent that any amount of pressure upon the shoulders does not produce pain. In rotary lateral curvature of the spine, a plaster corset with lacings is made to fit this suspended and straightened position. After the corset has been adjusted the patient is three inches taller than before. A jacket for a child six years old should weigh not to exceed one and one-quarter pounds, and for an adult two and three-quarter pounds. This makes a support as light or lighter than the steel brace, and it supports as the steel brace can not.

If the patient can afford the greater expense, I always advise the aluminum corset, for although the first cost is greater than for the plaster-of-Paris support, yet before treatment is completed the metal appliance will have proven the cheaper, for it is practically indestructable. Phelps calls it "the end of the law in spinal bracing," and I believe his statement to be correct. I do not suggest the aluminum corset as a substitute for plaster-of-Paris in acute Pott's disease and lateral curvature. I suggest it rather to take the place of such braces in cases requiring permanent bracing, or in individuals who are desirous of securing a support at any time which combines durability with lightness and comfort. So soon as a case of lateral curvature has been arrested, or the greatest amount of benefit has been derived from treatment, the aluminum corset will then be found a most agreeable permanent support. The aluminum corset has these qualities to recommend it to the patient:

1. Lightness.
2. Durability.

3. It is thin and does not interfere with the form and clothing.

4. Being extensively perforated makes it the coolest and most agreeable of supports.

5. The patient can wear it during bathing.

An ordinary corset weighs from one to two pounds, depending upon the size. To prevent cracking and to protect it from perspiration it is covered with a waterproof enamel, which is applied by heat.

To make an aluminum corset, first make a plaster mold of the body. Fill this, and from the cast thus obtained, an anvil of iron is made. Over the metal anvil the aluminum is hammered into shape. It takes two skilled workmen two weeks to make one of these corsets. When fitted to the body the corset is shellaced with a preparation that makes it impervious to perspiration. With an apparatus of this kind the patient can go in bathing. In Pott's disease the same kind of a corset can be used if it is put on with wire lacing and kept on. In lateral curvature cases the corset is to be taken off daily and the patient instructed in proper gymnastic exercises. In Pott's disease the spinal support is not to be removed except at the surgeon's directions.

The new operation of forcible replacement by Calot, of France, was done by Hippocrates 500 years B.C.; was revived in the time of Abrose Parè in the fifteenth century, and again in this generation by Hadra, of Texas. This is a procedure adaptable only in selected cases, and at the hands of experienced operators. Long ankylosed cases, or cases where abscesses with much deformity exists, should not be broken up. In the early history of cases forcible reduction has been of much benefit, but it is an operation attended with great risk.

Appendicitis. — Intra=Capsular Fracture of the Neck of the Femur.

By ROBERT T. MORRIS, M.D.,

NEW YORK CITY.

Clinical Lecture Delivered at the New York Post-Graduate Medical School and Hospital, February 16, 1901.

CASE I.—This patient, 23 years of age, had an attack of appendicitis in July, which confined him to bed for three or four days.

He recovered completely and was well until November, when he had another attack, which confined him to bed for about five days. Since that time he has never been quite well, and has suffered chiefly from dyspeptic symptoms, but also with a sense of uneasiness in the appendix region. He has had a daily rise of temperature of about one degree above normal. The rise of temperature, if due to a mucous inclusion of the appendix, would probably not have been so persistent, consequently I believe that it is due to saprophyte toxins liberated in the stomach and intestinal tract as a result of the fermentation which takes place when digestion is not complete. The process of digestion is often interfered with by the influence of an adherent appendix or one that is in a state of chronic ulceration, or even one in which the mucous and lymphoid layers have been replaced by scar-tissue.

The reason why these so-called harmless appendices of the latter class produce disturbance is because the contracting connective tissue pinches the terminal filaments of the sympathetic nerves and we have a reflex disturbance of Auerbach's and Meissner's plexuses.

On palpating the appendix in this case we find that it is about three inches long, curved upon itself like a horse-shoe, but quite normal in feel.

It is not difficult to palpate most appendices in the interval between attacks or at the onset of an acute attack, if one adapts a systematic method of examination and trains his finger-tips. Let us palpate this appendix. My first landmark is found by pressing upon the abdomen with three fingers, at a point above the navel on the right side. If we poke the patient with the ends of our fingers there will always be resistance

made by the abdominal muscles, but if we keep the fingers quite flat and coax the muscles of the abdomen a little, gently, we can palpate in cases that would not otherwise permit it on account of uncontrollable muscular contraction. If the three fingers, then, placed flat upon the abdomen, are carried beneath the rectus muscle until the spinal column is felt, then drawn toward the examiner, the ascending colon is felt to slip out from beneath the fingers, and that is the first landmark. On following the colon toward the cecum we soon come to small intestine, which one learns to recognize through the abdominal wall without difficulty.

In order to palpate the appendix, it is essential to fix it against a stable point, consequently we must press it against the psoas or iliacus muscle. In order to do this I steady the intestine by making pressure with my left hand on the left side of the abdomen, carrying the intestine rather firmly toward the right hand that is examining for the appendix. If the appendix is not felt on pressing directly down upon it, the fingers are carried close to the iliacus and psoas muscles in such a way as to lift the cecum, and the appendix, if not adherent, then bobs out beneath the fingers where it can be rolled against the fixed muscular point.

Many physicians doubt the possibility of palpating the normal appendix, but you often see it done here by two or three members of the faculty and the findings are verified at the operation a few minutes later.

Physicians who do not believe in palpation of the appendix are fond of quoting all sorts of exceptions—fat patients, patients with rigid abdominal walls, patients with appendices in various abnormal positions; and a good deal of capital is made out of the cases in which an error has been made on palpation. As a matter of fact, we know that we do not often make a mistake in describing the condition of appendices before operation in the presence of this audience.

My first incision, about an inch and a half long, is made through the skin and fat with a pair of sharp scissors. The reason why I chose an incision of this length for most of the interval and acute cases in the early stage, was because it gave room enough for all of our work and allowed the patients to

return to their work in about ten days with no danger of post-operative ventral hernia.

The idea of operating through this incision has been misconstrued by men who are not familiar with our work, and I insisted upon an incision of definite length for the purpose of attracting the attention of surgeons who are making unnecessarily long incisions, but, of course, an incision of any length required is used, if we need it. Almost all of our appendicitis cases can be operated upon with an incision an inch and a half long, in cases without pus. The short incision is not adapted to pus cases. The idea of a week and a half confinement belonging to the inch and a half incision was suggested by one of our house surgeons, and I happened to employ the combination in the heading of an article some years ago without any intention of making it a matter for such extensive comment.

The next step in the operation consists in splitting the external oblique aponeurosis with the scissors, in its line of traction. This exposes the internal oblique muscle and the internal oblique and transversalis are split in their lines of traction without any cutting. Dr. McBurney and Dr. McArthur were the ones who popularized this blunt dissection entrance. I employed it before either of these authors had written upon the subject, but gave it up as impracticable. After the publication of their ideas I again took it up, and am very glad to have done so, as it is a distinct step in progress when properly done in cases suitable for its employment. When we are ready to close the abdominal wall, the muscles that have been split in this way almost fall together naturally and require only very small sutures for approximation.

The peritoneum is now hooked up and a strand of catgut passed through it. This loop of catgut, which I call a guy-line, is left in place with a pair of forceps attached, to serve for neat approximation of sutures when we are ready to close the incision. I pull the colon out of the incision a little way and determine that it is colon by the longitudinal, white muscular bands. On pulling it out a little further we discover that we are pulling it in the wrong direction, because we come to fatty tabs which increase in number as we approach the transverse colon, so this part of bowel is replaced and we pull in the

opposite direction until we come to the cecum, which is bare of fatty tabs. The three white longitudinal muscular bands of the colon are now converging, as you see, and anatomically we know that the appendix is right at hand. Here it is, curved upon itself like a horse-shoe and held in that position by a single adherent band. The mesappendix is ligated with a strand of catgut and the appendix separated. The term "mesapdendix" is more euphonious than "meso-appendix" or "mesenterolium," which are commonly used. We make an elision of the "o" just as we do in "meso-entery" and derive "mesappendix" as we arrive at "mesenterly."

The incision is made through the peritoneum and muscular coat close to the cecum without dividing the mucous tube. The mucous tube is ligated with a small strand of catgut and this allows the muscular and peritoneal coats to overhang the point of ligation and to make quick repair. Before cutting away the appendix I scarify the cecum for half an inch all around it in order to be sure of getting peritoneal exudate for burying the stump. This is an extremely important point, as all men know who have done experimental work with the peritoneum.

A puckering string is passed around the cecum, half an inch away from the appendix. The appendix is now cut away and the stump depressed toward the lumen of the cecum, while the puckering string is drawn tight. This buries the stump so that we are safe against danger of secondary perforation.

Why should secondary perforation occur when there is a ligature at the stump of the appendix any more than it would in a ligated artery? It is because the ligature makes an area of compression-anemia, and any tissue made anemic by compression in this way is open to attack by bacteria. Why should an area of compression-anemia in the appendix be more liable to attack by bacteria than such an area in the artery? Because in an appendix we have a septic area on one side of the ligature, and in an artery we have no such dangerous neighbor.

The incision is now closed by pulling up on the guy-line, running a continuous suture of fine catgut along the peritoneal incision, then taking a couple of turns through the internal oblique and transversalis muscles and ending by uniting the ex-

ternal oblique incision. The reason for uniting these structures so carefully is because I found them in that condition, and my object is to leave structures as nearly as possible as I found them.

The last step consists in putting a subcuticular suture in the skin incision, taking care not to allow it to enter the fat. Sutures through adipose tissue liberate free fat and this is liable to burrow and interfere with prompt repair. If the fatty walls are pressed together at the moment when the suture in the skin is drawn snug, atmospheric pressure will prevent the fatty walls from becoming separated no matter how thick and heavy they may be. It is a mistake to think that we need to put in supporting sutures through heavy fat walls. Atmospheric pressure does the work very much better than we can do it with sutures of any sort.

The skin incision having been closed it is sealed with a piece of gauze painted with collodion.

This patient should be out of bed in a week and should leave the hospital in ten days.

I now examine the appendix, and splitting it lengthways find that the cause of trouble was due to a point of chronic ulceration, involving one-third of the proximal end of the appendix. I do not know why a sharply-defined point of chronic ulceration of this sort should exist, but it is in evidence, as can be seen by those who are seated quite a distance back in the amphitheater. Tuberculosis will often cause such a localized point of chronic ulceration, but this, I am sure, is not tuberculous.

CASE II. *Intra-capsular Fracture of the Neck of the Femur.*—

This patient, 56 years of age, stumbled over a chair two years ago and fell to the floor. She was unable to use the leg on rising, and it was found that she had intra-capsular fracture of the neck of the femur. An abscess later formed, which discharged for some months, and in all probability some small fragments of bone escaped. The patient has never been able to stand upon the leg and has gone about on crutches.

This scotograph of the case shows a peculiar thickening of the great trochanter, but does not define any injury of the

neck of the femur, still, we know that the chief point of injury is at the neck because of the objective signs which we discover on rotation of the femur. There is an inch and a half shortening of the leg.

This patient has eight grains of sugar to the ounce of urine, consequently I shall use rubber gloves in operating. There are three reasons why operations upon diabetic patients have so often ended in misfortune. First, blood carrying sugar is a fertile culture medium for bacteria, and we have to be remarkably accurate in our asepsis.

I do not believe in the use of rubber globes in surgery for most operations, because one loses the nice sense of touch which allows him to work skillfully and quickly, and the good effect of the aseptic gloves is lost by the longer time spent in operating, which allows more bacteria to fall into the open wound. If the surgeon is in fine physical condition he almost never needs to wear rubber gloves, because the bacteria in the epithelium of his fingers are not in a state of active development and are not readily transferred to the wound. If the surgeon, however, is not in good physical condition, and if he habitually carries bacteria in the epithelium of his fingers, which propagate rapidly, he should always wear rubber gloves in cases where infection would be dangerous.

Another reason why diabetic patients do not do well under operation is because the sugar circulating in the blood is hygroscopic, and the sugar is not satisfied by the blood-serum, but draws water from body cells to such an extent that they may not carry on repair well.

The third reason why diabetic patients do not do well is because the kidneys are often irritated by the sugar and are ready to develop a condition of acute nephritis on slight provocation.

I have operated upon diabetics a good many times, and by taking precautions that are known to be necessary, have never had untoward results from operation, except in one case of amputation of the breast. In that case the skin-flaps became gangrenous immediately and the patient died of septicemia. I do not quite know the explanation for the immediate occurrence of extensive gangrene in this case.

To expose the neck of the femur I make a curved incision beginning near the anterior superior spine of the ilium, carrying it to the outer side of the great trochanter, and then curving it inward again below the trochanter to a point nearly opposite the beginning of the incision. This will make a trap-door which gives us free access to the hip-joint.

On turning up the trap-door and cutting through the capsule of the joint, the site of the fracture is plainly in view—a transverse fracture through the anatomical neck of the femur. It is united by ligamentous union and there is a separate fragment of bone, about as large as a grain of corn, included in the ligamentous structure.

I now chisel off a thin slice of bone from the faces of the two chief fragments and remove the intervening tissue. The distal fragment bleeds freely enough to show that there is good circulation, but the proximal fragment is very white and does not bleed. However, we expect to obtain contact circulation—a lymph circulation, which will sustain the life of the fragment until union has occurred.

The freshened faces of the two fragments are now rotated snugly together and they come into nice approximation. A spike, three and a half inches long, driven through the great trochanter in the line of the neck of the femur, fixes both fragments so securely that they rotate in unison when my assistant rotates the femur.

The incision is now closed and the chances for a good result in the case, I believe, are excellent.

When I first studied surgery we were taught that these intra-capsular fractures of the neck of the femur were hopeless unless impaction had occurred at the time of the fracture, but now we know that the fragments can often be pinned together without difficulty and a satisfactory result obtained.

I shall put on a Buck's extension for two or three days, then employ sand-bag fixation for about two weeks, after that apply a hip splint and allow the patient to go about on crutches for about three weeks before removing the hip splint.

These elderly patients do not do well in bed, because their muscles are already degenerated and they fail when confined too long in bed. While the patient is in bed it is essential to

employ massage daily and such exercise of the limbs as can be obtained without disturbing the site of fracture too much.

NOTE.—April 6. The wound healed by primary union and the patient left the hospital six weeks after operation with undoubted firm bony union, and a useful leg.

[58 WEST 56TH STREET.]

Hysterical Astasia=Abasia in a Child Aged Two Years and Four Months.

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THE patient, R. H., female, aged 2 years and 4 months; German-American parentage; parents healthy; mother's sister a neurasthenic; one cousin, son of the mother's brother, epileptic. Patient previously enjoyed good health, though not robust and rather small for her age; is rather bright mentally and has walked and talked as well as is usual with children of her age.

From April 18, to May 12, 1899, she was confined to bed by a moderately severe attack of bronchitis; during this illness she did not take nourishment well, and by the time the acute symptoms subsided she was considerably reduced in flesh and strength.

Her physical condition, however, soon improved and about the middle of May she was able to sit up. But for about a month longer she asserted an inability to walk. Careful examination demonstrated the absence of any signs of organic disease which could cause such disability. She moved the legs freely when sitting and the amount of muscular resistance which could be offered to passive movements showed that the difficulty was not due to muscular weakness; no muscular atrophies and no pain or anesthesia could be demonstrated, nor were there any evidences of disease of the bones or joints. The tendon jerks were present in about the normal degree; no vesical or rectal disturbances occurred.

When placed in a standing position she became much agitated

mentally, cried out that she could not walk, stiffened the legs and extended the feet so as to stand upon the toes, exerting sufficient strength to maintain herself in this position for a minute or more, and if supported walked with ataxic movements of the legs.

While being examined if asked to grasp something with the hand she protested an inability to do so but ordinarily used the hands very well.

As her physical condition improved the difficulty in walking diminished, and after about a month disappeared, since which time she has continued well.

This condition, known as *astasia-abasia*, or inability to stand and walk is one of the recognized manifestations of hysteria. It is of rather rare occurrence, though most frequently seen in children, but I do not recall having seen a report of a case occurring at so early an age.

[3502 FRANKLIN AVENUE.]

Municipal Physicians of Liepsic Strike for Higher Pay.—A report comes from Liepsic to the effect that on April 5th, one hundred and fifty-five physicians of that city in the employ of the municipal government went on a strike for higher pay and more considerate treatment.

The American Academy of Medicine.—The twenty-sixth annual meeting of the American Academy of Medicine will be held at the Hotel Aberdeen, St. Paul, Minn., on Saturday, June 1, 1901, at 11 A. M. (executive session; the open session beginning at 12 M.), and continuing through Monday, June 3rd.

The principal feature of the meeting will be a symposium on "Institutionalism," and another on "Reciprocity in Medical Licensure." Series of valuable papers on both topics have been promised, as well as interesting papers on some other subjects. The President's Address (Dr. S. D. Risley, of Philadelphia) will be delivered on Saturday evening, June 1st, and the Annual Social Session held on Monday evening, June 3rd.

Members of the profession are always welcome to the open sessions of the Academy. The Secretary (Dr. Charles McIntire, Easton, Pa.) will be pleased to send the program, when issued, blank application for fellowship, etc., when requested to do so.

EDITORIAL.

THE NECESSITY FOR COUNTY MEDICAL SOCIETIES.

The time has come for the medical profession in Missouri to weld itself into a more compact body for aggressive, offensive and defensive action. Influences and conditions that are detrimental to its welfare are steadily becoming more powerful, and of this the incompleteness of the recently-enacted Medical Law of this State is a forcible example.

For the protection of its interests against antagonistic influences a complete organization or reorganization is necessary. To successfully accomplish this, the beginning must be made and the foundation laid in the county society. These must be organized in every county in the State and must be federated into one strong organization—the State Association, which shall be the legislative or governing body, the cap-sheaf of the organization, the keystone of the arch of which the others are the pillars.

The county society should have on its roster the name of every regular practicing physician of good standing in the county, and each should consider it his duty as well as privilege to be a member of that body. It is by means of the State body acting through the immediate and local influence of the county organization that the power of the profession will be made felt, and through that agency more than any other will it be able to command the respect and consideration that society in general owes to it. The county society will have the additional influence of promoting a better acquaintance among its members and of breaking down that condition of selfishness that too commonly arises when one busies himself solely with his own affairs and takes no interest in the general welfare of his profession. It promotes a better understanding of each other, elevates professional regard, and stimulates the interest in the work of the State organization.

A vigorous and active county society has a marked effect in increasing a wholesome respect on the part of the laity for the power and influence of the profession, and it is through this agency that evils will be eradicated and results accomplished that might otherwise be impossible.

Steps should be taken at the next meeting of the State Association to promote the organization of a county medical society in every county in the State where they do not at present exist, and each society should be made an integral part of the State body, retaining all of its local independence but uniting with similar societies to form the larger one representing all of the regular profession of the commonwealth of Missouri. Membership in the county society should be made a pre-requisite to that of the State organization.

A means of intercommunication such as is now carried on by the New York State Medical Association, and that of Pennsylvania and Illinois would be of value in binding into a closer union the individual elements of the State Association and would demonstrate its usefulness in promoting a "community of interests."

A close federation of active county societies will make a powerful State organization, and the State organization needs power.

THE ABOLITION OF THE ARMY CANTEEN.

Of the various features of our army organization, to which public attention has been attracted by the military operations of the past few years, none has received the amount either of commendation and condemnation that has fallen the lot of the army canteen. The influence of the temperance element has been powerful enough to cause its abolition, in spite of strong opposition on the part of interests favorable to it and of the army officers themselves.

In this regard the *Medical Record* of March 9, 1901, claims that the doing away with the canteen has been the cause of grave dissatisfaction among the rank and file of the United States army. It further

adds that "the supporters of the measure were doubtless swayed by the best of motives, but it is probable that the majority of them were more or less ignorant of the working of the system, and the community at large was led to believe that the canteens were the scenes of unbridled license and the great incentive to drink among the soldiers. It is impossible to make a man in any station of life refrain from drink by law, and the soldier is subject to this common failing; and if he can not satisfy his appetite in one place, he certainly will in another. Better, then, that the canteen supplying wholesome liquor should be open to him than that he should be compelled to resort to outside drinking-shops where the quality of the liquor is dubious."

The arguments for and against the army canteen appear to us to depend upon the question, whether or not alcoholic stimulants are necessary to the welfare of the soldier in health. If this question can be answered in the affirmative, then the Government should supply this with the ration or from stores, depots, or canteens under its supervision. If, however, a negative reply must be given, then the canteen has no valid reason for its existence and ought to be discontinued by the Government.

The rigid exactions of military discipline probably cause a tendency on the part of the soldier to go to the other extreme when relaxation occurs, and he resorts to stimulation in order to obtain, to him, the greatest amount of enjoyment in the brief period of relief from duty. This, however, is an unnecessary evil, and one which, in civil life, can be regulated, and which might also be possible in the army. In the physical exhaustion incident to prolonged and forced marches, and in those resultant from climatic conditions, an alcoholic stimulant is often beneficial, and when such conditions exist, this stimulant should be supplied with the ration and not left for the soldier to procure where and in such quantities as his inclination and means may allow him.

In view of the care with which the recruits are selected—their excellent physical condition and in the years of early manhood—it is unreasonable to believe that their efficiency can be promoted by the use of alcoholic stimulants, or that such are necessary for the maintenance of a good physical condition, except under unusual circumstances.

In contrast with the claims for the continuance of the army can-

teen is the action of one of the largest railway systems in America, with an army of employees, which recently issued an order prohibiting its employees, under penalty of dismissal, from using alcoholic stimulants at any time, whether on or off duty, and also from frequenting places where such were sold. This may seem to be an invasion of the rights of the individual, but was no doubt thought necessary by the railway company for the efficiency of its service. Evidently it did not consider a canteen necessary for its employees, and if such a solution is possible in civil life it should apply to an equal degree in the army.

THE INCREASE OF TYPHOID FEVER IN ST. LOUIS.

The anticipated danger to the health and welfare of the people of St. Louis from the contamination of the water supply by the sewage from the Chicago drainage canal was not a fanciful chimera. That this is a real and not an imaginary condition is conclusively proven by a recent report from the local Board of Health which appeared in the daily press and which revealed the fact that there had been an unusual increase in the number of cases of typhoid fever reported since the opening of the drainage canal.

The report says that the canal was opened January 17, 1900, and that since that time the typhoid rate has steadily increased, retarded only by the precautions which many families have taken to boil and filter their drinking water. But for these measures taken by consumers of the city water after repeated warnings from the health officials the figures would show even a more startling condition than at present. The annual average number of cases of typhoid fever reported in four years just previous to the opening of the canal was 386, since that time, however, the number of cases has increased to about 1200 a year, or nearly 350 per cent.

These estimates represent only those cases reported to the Board of Health, while the actual number of people suffering from typhoid fever was doubtless greater than this, owing to the fact that in many instances the cases are never reported to the Board of Health. In

such instances it is probable that the evidences of the disease have been so well-marked that there could be no possible doubt in regard to the question of the diagnosis, and as the Bacteriological Department of the Board of Health was not needed for making blood-tests, the cases have not been reported. In some instances, though probably in a small proportion of cases, the blood-tests have been made by other bacteriologists than those of the Health Department, and when such occur a report is seldom made to the Board of Health. In all events the amount of typhoid fever present in the city at a given time can only be determined approximately and is always greater than the actual number of cases reported.

There can be no question regarding the source of origin of the typhoid infection and the culpability of the drainage canal is established beyond a doubt.

WHEY AND CREAM MIXTURES IN INFANT FEEDING.

The use of whey in infant feeding is not new. Eustice Smith, in his work, "Wasting Diseases of Infancy," gives it first place in the feeding of young and atrophic infants. Kehrer and Backhaus have recommended it in cream mixtures. Not long ago, Ashby devoted a lengthy article to its preparation and use.

The scientific law upon which its use is based is drawn from the fact that human milk contains lactalbumin and casein in the ratio of 1 to 1, while in cows' milk the ratio is 1 to 4 or 5. A dilution of cows' milk, while diminishing the caseinogen to a percentage equal to that in human milk, at the same time produces a dilution of the lactalbumin to one-fourth or one-fifth of that in human milk. There is, therefore, a deficiency of albumin in the ordinary milk modifications.

To make up for this deficiency whey can be used. Recently Rotch and others have laid down rules whereby any modification of whey-proteids and caseinogen, within certain limits, can be obtained in the milk laboratories. This is certainly a decided advance in infant feeding.

In the past there have been two drawbacks which have made whey and cream mixtures less satisfactory than their theoretical value would indicate.

The first of these was the fact that ordinary gravity-cream was used in these mixtures. We know now from Freeman's researches that the cream contains the most of bacteria which is contained in milk. Consequently the addition of gravity-cream to whey served to increase the number of bacteria in the mixtures. By the use of centrifugal cream the bacteria are not increased proportionately.

The second drawback was the fact that the rennet used in making the whey was not destroyed. The casein in the added cream was, therefore, precipitated, and the whey and cream mixtures were full of fine flocculi. By heating the whey for about twenty minutes at 160° to 165° F., the rennet is destroyed, and at this temperature the lactalbumin remains in solution.

The finished laboratory product of the whey and cream mixtures is certainly an imitation of mother's milk. Perhaps we can never attain to anything better. The only drawback at present is that the whey must be heated. But at such a low temperature very little or no change is apparent. The milk or cream added to the whey should be fresh, clean, and unheated.

Thus we can obtain all that we can expect at present in the art of substitute infant feeding.

THE BOSTON MEDICAL LIBRARY.

The founding, development and growth of medical libraries are of noteworthy interest. Their growing multiplicity show an awakening to a realization of their need on the part of the profession, and an evidence of appreciation of the benefits that they confer. These are numerous. They quicken the vitality, stimulate the interest and promote the zeal of their members. They are indicative of a healthful condition and of a progressiveness that is pleasing and valuable to all. A recounting of one's success stimulates powerfully a desire to emulate it, to the extent of equaling or even of surpassing it, and it is this

commendable trait that has made medicine the leading science of the world.

Early in January the new building of the Boston Medical Library was dedicated and the occasion was one well worthy of record. The addresses by the President, Dr. Cheever; the Librarian and founder, Dr. Chadwick; Dr. Draper, President of the Massachusetts Medical Society; Dr. Osler, of the Johns Hopkins; Dr. Billings, of New York, and Dr. H. C. Woods, of Philadelphia, were most admirable and well worthy of those able men.

The library is one of the most important in the country; fourth in size, exceeded only by that of the Surgeon General's Office in Washington, that of the College of Physicians in Philadelphia, and that of the Academy of Medicine in New York; having outstripped many of the libraries which antedated it by many years in their foundation. The building itself is a handsome, admirably arranged structure, charmingly situated facing the public park system. It is a splendid monument to the indomitable energy of Dr. James Read Chadwick, the Librarian, to whose untiring efforts this splendid result may really be said to be due. It was of him and his fellow-workers that Oliver Wendell Holmes, the first President of this Library, spoke in his charming dedicatory address upon the opening of the Library in its modest quarters, in 1878, an address, by the way, which will be perused with interest by every medical man; he said, in describing the rapid growth of the Library and the efforts of the young physicians who, within four years of the time when they first met to discuss the different projects for the Medical Library, had secured by the liberality of associations and individuals a collection of ten thousand volumes, of five thousand pamphlets and one hundred and twenty-five journals regularly received, and all worthily sheltered under their own roof: "It has sprung up as it were in the night like a mushroom which stands before us in full daylight, promising to grow and flourish with the eternal freshness of an evergreen."

The generous words he had for the leading spirit in the undertaking are such as to make any young man wish to go to work and found a medical library somewhere if he could but find an Oliver Wendell Holmes to tell of it; he calls him "the strenuous agitator who gave

no sleep to his eyes, no slumber to his eyelids until he had gained his ends; the untiring, imperturbable, tenacious, irrepressible, all-subduing agitator who neither rested nor let others rest until the success of the project was assured."

In this rapidly-progressing period the text-book soon become obsolete; the literature of the time must be sought in the periodical, and that we may keep thoroughly abreast of the times, the efforts of this Library have been above all directed to the completing of their list of periodicals, as Oliver Wendell Holmes, in the address before quoted, says: "We must have the latest thought in its latest expression, the page must be newly turned like the morning bannock, the pamphlet must be newly opened like the antiprandial oyster. Thus a library, to meet the need of our times, must take and must spread out in a convenient form a great array of periodicals. Our active practitioners read these by preference over almost anything else. Our specialists more particularly depend on the month's product, on the yearly crop of new facts, new suggestions, new contrivances, as much as the farmer on the annual yield of his acres."

Dr. Chadwick may well look with pride upon this Institution, the splendid fruit of his life's work and he may be congratulated upon living to see, as few do, the results of his labors.

A most valuable lesson is taught by the library, and it is one which should be taken to heart by every ambitious, progressive young physician, as showing what energy, perseverance and brain can accomplish. There is need in every community, and if he find not a Holmes to thank him, he will find a reward equally precious in the hearts of his colleagues.

MARRIAGE RESTRICTIONS IN INDIANA.

The Indiana Legislature is endeavoring to secure by a short cut, the beatific condition of perfect marital happiness in that state—Indiana—and to solve negatively the question "is marriage a failure?" by compelling the guileless and thoughtless candidates to undergo a pre-marital examination for the purpose of determining their fitness for its

obligations and to thus limit divorces by preventing ill-chosen marriages.

The *N. Y. Medical Record* is the authority for the statement that a bill has passed the Indiana Senate authorizing the Governor to appoint a commission, which shall be composed of two women, who are mothers, two physicians of conceded ability, and one attorney of high standing, who shall prepare rules for the government of officers in the issuance of marriage licenses and of ministers in performing ceremonies; and examinations shall be made of all applicants for licenses, and no marriages shall be celebrated in the State unless the requirements are complied with.

Whether an opportunity was given by the Legislature to the aforesaid candidates to speak in their defense, is not stated, and if so they were evidently in the minority both as regards voice, lobby and influence. The advanced state of society in Hoosierland may welcome this innovation to the former conditions and may make of it one of the glad-some features of that festal time, but in the vicinity of the 91st longitudinal parallel we are wedded to, and, in the same old way of our ancestors, and if we mistake not, the enactment of this measure will promote an unusual period of prosperity for the "Gretna Greens" on the borderlands of that commonwealth.

The Association of Medical Officers of the Army and Navy of the Confederacy.—This Association will convene in Memphis, Tenn., May 28-30, 1901, during the meeting of the Confederate Reunion. All Surgeons, Assistant Surgeons, Acting Assistant Surgeons, or Contract Surgeons and Hospital Stewards in the Army and Navy of the Confederate States, and all regular physicians who served honorably in any capacity in the Confederate States Army and Navy, and all regular physicians who are sons of Confederate Veterans, are eligible to membership and cordially invited to attend the meeting and contribute reports of important cases, and likewise also any reminiscences worthy of preservation connected with their service in the Army or Navy of the Confederacy.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Special Meeting, January 31, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

The New City Hospital.

THE PRESIDENT stated that the hospital as now planned was at best but a makeshift; that the medical profession was justified in approving the excellent work of the original Hospital Commission which contemplated the erection of a general city hospital in the western limits of the city on the grounds around the Insane Asylum and Female Hospital. This hospital was to have been erected on the pavilion system, and an emergency hospital (same system) on the old City Hospital site (to accommodate 400 patients), to be erected and to be used for the acutely sick, who were to be transferred as soon as they were convalescent to the general hospital; and finally, as the city grew, to duplicate this emergency hospital in the northern portion of the city. This plan had been abandoned, and the present plan was to erect on five acres of ground at the old City Hospital site a pavilion hospital to accommodate fifty per cent. more than was originally contemplated; that the "hospital system" as suggested by the Hospital Commission is non-existent, and in its place we have plans for an hospital on the original ground, this to serve not as an emergency hospital, but as *the City Hospital*; for the original general hospital scheme has been abandoned.

He spoke also of the financial phase. St. Louis at present is said to be handicapped for funds. The law now provides for a certain amount of money (one per cent. of the revenue) from \$50,000 to \$55,000, to be laid aside yearly to be devoted to hospital erection. There is about \$300,000 on hand; this is to be consumed in the erec-

tion of the buildings as now planned. With an increase of \$55,000 yearly, it will take twelve years to get the complete hospital, for the estimated cost is about \$1,000,000. In the meantime the city is renting at a generous figure a convent abandoned by its former occupants as untenable. *We now have 500 or more patients on hand, and as the entire capacity of the completed hospital is not to exceed 620 patients*, it is a simple proposition to see where we shall be when the new hospital is completed; the city will have rented the abandoned convent for many years, much money will have been expended, and yet there will be no more room for the pauper sick twelve years hence than we now have. And, further, attention is called to the fact that the city hospital system—that is, the hospitals under municipal control—will not be relieved at all by this proposed handful of buildings on Lafayette Avenue. For the truth is that the Insane Asylum is so crowded that many hundreds of patients rightfully belonging within its walls are perforce housed in the Poor House. The Poor House is of necessity packed, nay overpacked, with inmates; and finally, that the Female Hospital is inadequate in its capacity. The latter title is, patently, a misnomer; and the hospital itself has no real reason for existence, for the women there housed should be received, upon a similar basis as men, in properly equipped emergency and general hospitals. It would be wise to abandon the so-called “Female Hospital.”

The question of an hospital for contagious diseases is germane as a subject of collateral interest. St. Louis has no hospital facilities for people afflicted with contagious diseases, and nothing is contemplated in these plans for the care of this class of cases, save a “contagious building,” and this is but for the accommodation of contagious diseases arising within the hospital, with a capacity limited to fifty or sixty beds. Guests of the city may and often are affected with contagious diseases. There is no place to send them except to the City Hospital; their reception there is at the option of the superintendent in charge; if he sees fit to reject them, they must then be subjected to a painful and wearisome journey, by inadequate vehicles, to the so-called “quarantine hospital” far south of the city. This is a serious problem not only to the physician in charge, but to the patient, who may be, and often is, amply able to pay for suitable surroundings. St. Louis

should be provided with buildings of sufficient size to care for this class of cases.

There should also be municipal buildings suitable for the care of the diseases incidental to childhood.

The "municipal hospital situation" is far-reaching; much farther than our present city officials are inclined to consider or provide for.

The Secretary will now read such ordinances and reports of Hospital Commission, communications, etc., as are pertinent to the topic up for discussion this evening.

[18,374.]

An ordinance providing for a Hospital Commission, and prescribing the powers and duties thereof.

Be it ordained by the Municipal Assembly of the City of St. Louis, as follows:

SECTION 1. A Hospital Commission is hereby created, to be composed of the Mayor, the Health Commissioner, a member of the Council—to be appointed by the President thereof, a member of the House of Delegates—to be appointed by the Speaker thereof, two physicians, and one member of the Board of Commissioners of Charitable Institutions—the last three to be appointed by the Mayor. Said Commission shall continue for the term of four years from the date of the approval of this ordinance. All vacancies by death, resignation, or otherwise, shall be filled by a majority vote of the members of said Commission at a meeting, of which notice shall have been given five days prior thereto. No member of this Commission shall receive any compensation whatever for his services as such. Said Commission shall have the power to adopt rules for its own government and regulation, to elect its own officers and committees for such time and with such powers as may be prescribed by its rules. Said Commission is hereby empowered to call upon the heads of the various city departments to detail such assistance as may be required by the Commission in the preparation of its report.

SEC. 2. Said Commission is hereby charged with the duty of formulating a scheme or plan for the construction or reconstruction and general location, distribution and management of the hospitals belonging to the city, for the purpose of producing a complete, harmonious system for said institutions, and designate the direction of needed expenditures in construction or remodeling of buildings. Said Commission shall make reports from time to time, to be forwarded through the

Mayor to the Municipal Assembly, and when they deem necessary they shall prepare and submit to the Assembly ordinances embracing what legislation is needed.

Approved March 14, 1896.

From this the Commission did not consider that it had any executive powers or was called upon to give the details of construction, or in other words, to get up a set of plans complete. We all know the general condition of the institutions throughout the city and the purpose set forth was to adjust and correct the deficiencies as far as possible or practicable. The speaker then read the report of the sub-committee which had been adopted, which follows:

ST. LOUIS, MO., August 21, 1900.

Honorable Board of Public Improvements:

GENTLEMEN.—The authenticated copies of report of Committee of the Hospital Commission and the sketch plans accompanying said reports designated as Exhibits A, B and C, which have been on file in the office of the President, should now be transferred to the Board and become part of its records, for the reason that the plans have been adopted by Ordinance No. 20,162, and the Board is directed to cause the hospital to be erected in accordance with said plans. The report of the Committee is an important part of the records, as it gives a needed interpretation of the plans, telling what is intended to be accomplished and what is excluded. Ordinance 20,162 provides that the plans be so modified as to increase the accommodations of the hospital accommodations fifty per cent. beyond the recommendations of the Committee, and to this end the isolation ward is to be two stories in height, and the octagonal ward three stories, instead of one and two stories, respectively. This modification will increase the capacity of these wards from 121 to 192 patients. This departure from the original idea is not entirely consistent with the pavilion plan, but was made to meet conditions in which the city is placed. Large needs, but small means.

The completion of the buildings authorized by Ordinance 20,162 will come far short of providing hospital accommodations that will enable the temporary City Hospital to be vacated. The Commission intended the hospital on this site for the treatment of emergency and acute cases only, and the Commission's plan included the concurrent erection of pavilion wards on the ground on the south of Arsenal Street, opposite the Female Hospital, to accommodate chronic and convalescent cases.

In my opinion this part of the Commission's project must not be lost sight of. Believing that the present appropriation will complete the building, whose construction is now authorized, it is possible that sufficient accommodations for an emergency and acute case hospital will be sufficiently met, and that further appropriation, when made, should be to provide accommodations for the more numerous class of cases which the Commission proposed to provide on Arsenal Street.

Respectfully, ROBERT E. McMATH.

[Copy.]

ST. LOUIS, MO., January 29, 1897.

To the Officers and Members of the Hospital Commission:

GENTLEMEN.—The members of your Committee appointed to prepare the preliminary studies, with sketch plans, for the hospital system of the city, having made a careful study of the question, report as follows:

That the site of the old City Hospital affords the most satisfactory available location for the erection of an emergency and acute case hospital. Your Committee believe that the needs of the city, with its rapidly shifting center of population, may be provided for, for many years by the erection at this point of an hospital providing accommodation for 420 patients, if, concurrent with the erection of this structure, there may be erected on the ground adjacent to, opposite the building known as the Female Hospital, semi detached wards which would conform to the general plans herewith submitted.

The plans accompanying this report and forming a part of the same are the result of a careful study of the leading hospitals of the world, and comprise the best points of the various structures examined. The hospitals studied include not only American, but the great structures extending over Europe and as far east as Persia. As the result of this study your Committee believe that a system of wards, better known as the pavilion system, would best meet the demands made by the advanced knowledge of medical science and the hygienic principles of hospital construction.

In conformity with this conclusion the sketch plans marked Exhibit A, B and C are herewith submitted, and an elaboration on these lines, with the careful attention to details necessary to approximate perfection, would result in an hospital structure at least equal to, and we believe superior to any now existing, and possessing greater facilities for the economic and scientific handling of disease and accident.

We further recommend that when the growth of the city justifies it, a similar building be erected in the northern part of the city to attend to the growing needs of that section.

Exhibit A will clearly define and explain the arrangement believed to be the best utilization of the space afforded by the site; the accommodations provide for the greatest number of patients that is allowed by the highest possible authorities. This block plan defines the location of the various buildings, their accommodation, uses, etc. The arrangement gives the maximum amount of light, sun, and air to each ward, with the greatest ease of service and the most economical arrangement for heating and ventilating. The limit of a little over 400 patients is the greatest number that can be handled successfully in the space, and this only with the most efficient modern methods of heating and ventilation. The design contemplates that this hospital shall be equipped with every approved convenience for the reception, prompt and scientific treatment of all the acute surgical and medical cases that come under the city's care, excluding only small-pox and contagious diseases (except such as originate after admission), also all insane cases other than those under observation pending commitment to the asylum.

To prevent overcrowding and give opportunity for the best results in treatment, all convalescent and chronic cases are to be provided for in hospital buildings built as elsewhere recommended.

This central hospital is designed to be used for first relief in all cases except contagious and insanity cases, as previously mentioned, but provision is made for their observation and for criminal cases. The situation is central to the denser districts of the city, and with a systematized ambulance service would be able to care for all emergency cases that need relief from the city for several years to come.

The hospital pharmacy has in connection with it a dispensary for outdoor relief, the general arrangement of which will be seen by reference to the accompanying plans.

The Committee are of the opinion that all cases seeking relief from the city should first receive it at this hospital. If this plan is approved, the present dispensaries should be ambulance stations only, under the charge of a physician, and equipped for the prompt and safe removal of emergency and accident cases to the central or other hospital, or to the home of the victim.

It has been a long-established custom to permit the use of patients in the city hospitals for the clinical instruction of students attending medical lectures in the city. Your Committee considers this a legitimate privilege and one that might be properly enlarged and perpetuated under such regulations as would make it subordinate to the best interests of the patients. Without specifying, at this time, what are deemed necessary regulations to this end, the Committee recommends

in the plans submitted an amphitheater in close relation to a dispensary. From the latter, as well as the hospital walls, material may be drawn for the purposes of clinical instruction. A pathological and bacteriological laboratory are recognized as necessary in a modern hospital equipment, and the collecting and placing of specimens in a properly arranged museum, where they may be accessible for inspection and study, is also recommended. With this end in view, rooms have been provided in the plans at points most convenient for the work.

Other features suggested are the Administration Building, to contain offices, living rooms, nurses' home, kitchen block, laundry, dead-house, and other buildings necessary to the successful administration of an hospital; in addition to the wards, all have received our careful attention. An ice machine, located in the power block, is strongly recommended, not only to supply refrigeration to store-rooms for perishable food and similar uses, but for the manufacture of ice for other institutions. Facilities for preparing distilled water, in connection with such a machine, is an obvious advantage to an hospital. The large annual expenditure for ice for the city institutions has instigated this suggestion. Steam disinfecting appliances should be provided with the laundry equipment.

While the foregoing brief outline, in connection with the set of sketch plans submitted, covers the immediate needs in our hospital service, in the case of emergency and acute cases we deem it of equal importance that the suggestion of erecting wards adjacent to the Female Hospital, or Poorhouse, be considered and provided for at the same time. These further accommodations must be furnished in order to provide for chronic cases and those who are convalescing. Such wards would form a part of the general hospital buildings, which might, with the annual income already fixed for hospital work and such appropriations as might be made, be completed within a few years.

Without submitting sketch plans for the extensions suggested, your Committee recommends that the same general arrangement as shown in plans for central hospital be followed, with such modifications in construction as the special needs of the various wards and administrative offices and rooms make necessary. We further recommend that the present Poorhouse building be assigned to the use of the chronic insane, and be made fireproof so far as may be practicable, and otherwise remodeled so as to make them suitable for the insane and to form part of the general hospital buildings, and that other provisions be made for the pauper charges of the city at the earliest possible date. Your Committee has given some time to the study of the question of buildings and location of these charges, but recognizes that such considera-

tions were not within the scope of the work assigned to it, so refrains from discussing the question.

The Committee recommends that, unless legal obstacles exist, the Female Hospital become incorporated ultimately with the general hospital, losing its identity in its present form, and that the building be removed as soon as other accommodations have been prepared. If this is not feasible, we recommend that it be used only for the class of patients in the interest of which it was originally intended to be used, and that all other women and children be provided for in the general hospital scheme.

We recommend that all the old small pox wards of the Quarantine Hospital be destroyed by fire, and that needed new ones be erected in accordance with modern ideas, where it will be possible to give the service that is rightfully expected by the inmates. We also recommend that a more humane method of transportation from the city of this class of patients than that now in use be provided.

The consideration of the question of management of the hospitals we deem it best to postpone until after questions of construction and distribution of buildings have been decided upon. Your Committee further suggests that immediate steps be taken to clear the site of the proposed central acute and emergency case hospital of the remains of the old city hospital structure.

The need of improved and enlarged hospital accommodations is so obviously urgent that your Committee feels that the funds available for such use in the near future are totally inadequate.

As greater appropriations can not be made without injurious encroachment on revenues needed for other important interests, we heartily endorse the recommendations of his Honor, Mayor Walbridge, that steps be taken to secure the necessary authority to increase the limit of the city's indebtedness, that these important interests shall not suffer through the present deficiencies in the city's revenue.

Recognizing the need of legislative provision for the furtherance of this hospital building scheme, your Committee has now under consideration a form of ordinance which it will submit for your consideration at an early day.

Respectfully,

[Signed]

HALSEY C. IVES, Chairman.

ALBERT MERRELL, M.D.

[True Copy.]

MAX C. STARKLOFF, M.D.

Official report filed with the President of the Board of Public Improvements.

[Signed]

HALSEY C. IVES, Chairman.

[20,162]

An ordinance to adopt general plans for City Hospital buildings to be located on city block No. 1252, and authorizing the construction of a portion of the buildings, and providing for the preparation of detail plans and supervision of the work of construction, and making appropriation to pay the cost thereof.

Be it ordained by the Municipal Assembly of the City of St. Louis, as follows:

The general plans for City Hospital buildings, to be located on the property of the city of St. Louis, situated between Carroll Street and Lafayette Avenue, St. Ange Avenue and Fourteenth Street and Grattan Street, known as city block No. 1252, which were prepared by the City Hospital Commission created by Ordinance No. 18,374, are hereby approved and adopted. Said plans are designated in the report to said Hospital Commission of a subcommittee, dated January 29, 1897, as Exhibits A, B, and C, of which blue-print copies are on file in the office of the President of the Board of Public Improvements and are endorsed: "Filed with President Board of Public Improvements Official Drawing Hospital Commission, three sheets Exhibit A, B, and C, Halsey C. Ives, Chairman." Provided, however, that said general plans are hereby directed to be modified so as to increase the capacity of the hospital when fully completed from 411 to 620 beds.

SECTION 2. The Hospital shall be designed and conducted upon the pavilion plan. The several buildings shall be constructed of granite, stone, brick, iron and wood, so as to be fireproof as nearly as possible. The foundations shall be concrete and piles where found necessary. The total cost of the hospital buildings and complete equipment of boilers, machinery and appliances required for heating, ventilation, laundry, kitchen and other service appropriate to a hospital, together with cost of plans and superintendence, shall not exceed \$1,000,000.

SEC. 3. The Board of Public Improvements is hereby authorized and directed to cause the following-named buildings to be erected and equipped: Isolating ward, two stories high; octagonal wards, three stories high; connecting wards, one story high; laundry block, one story high; kitchen block, three stories high, and boiler house, one story high. Said buildings shall be built in accordance with plans and specifications prepared by the Commissioner of Public Buildings, and approved by the Board of Public Improvements, and the said Commissioner of Public Buildings shall supervise and superintend the erection of said Hospital buildings subject to the direction and control of the Board of Public Improvements.

SEC. 4. The Commissioner of Public Buildings, with the approval of the President of the Board of Public Improvements, may employ for the preparation of necessary plans and drawings and for supervision of work, one principal draftsman at a salary of \$125 per month, one draftsman at a salary of \$90 per month, and one superintendent at five dollars per day of actual service. The wages of such employes shall be paid out of the fund appropriated by this ordinance, and shall be charged as part of the cost of the buildings.

SEC. 4. The cost of the above described work shall be paid by the city of St. Louis, and the sum of \$258,000 is hereby appropriated from fund "Erection of Hospital Buildings" to pay the cost thereof.

Approved August 15, 1900.

[20,212.]

An ordinance to amend Ordinance No. 20,162, approved August 15, 1900, entitled, "An ordinance to adopt general plans for City Hospital buildings, to be located on city block No. 1252, and authorizing the construction of a portion of the buildings, and providing for the preparation of detail plans and supervision of the work of construction, and making appropriation to pay the cost thereof."

Be it ordained by the Municipal Assembly of the City of St. Louis, as follows :

SECTION 1. Ordinance No. 20,162, approved August 15, 1900, entitled, "An ordinance to adopt general plans for City Hospital buildings to be located on city block No. 1,252, and authorizing the construction of a portion of the buildings, and providing for the preparation of detail plans and supervision of the work of construction, and making appropriation to pay the cost thereof," is hereby amended by striking out Section. 3 of said Ordinance No. 20,162, and inserting in lieu thereof the following :

SECTION 3. The Board of Public Improvements is hereby authorized and directed to cause the following named buildings to be erected and equipped, namely: Isolated ward, two stories high, with basement; octagonal wards, three stories high, with basement; connecting corridors, one story high; laundry and boiler block, one story high, with basement, in which boilers and appurtenances shall be placed; kitchen block, three stories high, with basement; surgical building, one story high, with basement. Said building shall be located, as shown, on the modified block plan of New City Hospital, approved by the Board of Public Improvements on November 23, 1900. Said buildings shall be built in accordance with plans and specifications prepared by the Commissioner of Public Improvements, and the said

Commissioner of Public Buildings shall supervise and superintend the erection of said hospital buildings, subject to the direction and control of the President of the Board of Public Improvements.

Approved January 15, 1901.

After the reading of these memoranda and ordinances bearing upon the hospital situation, the President, in laying the matter before the Society and its guests for discussion, mentioned that it was a matter of vital interest to the tax-paying public why this hospital scheme should have been permitted to lie dormant for so many years; the dates of the various memoranda extending back as far as 1896. No adequate reason had ever been advanced why St. Louis, in her poverty, unable to build suitable hospitals for the care of her sick poor, should not have accepted the propositions tendered by syndicates to erect buildings, to be rented by the municipality, with the option of purchase at the expiration of a stated number of years; there surely exists a field for wealthy philanthropists to build and present to the City of St. Louis wards conformable to modern knowledge and adequate to the demands of an ever-enlarging number of sick poor.

MR. LONGFELLOW, Commissioner of Public Buildings, said the impression that the scheme as laid out by the Hospital Commission had been abandoned, was erroneous. The intention is to keep within this scheme. It is realized that $4\frac{3}{4}$ acres of ground at the old City Hospital site is insufficient for hospital accommodations adequate to the needs of a city the size of St. Louis, but it is the only site available on which we can place two-story buildings to accommodate 400 patients, or three-story buildings to accommodate 600 patients, and thus make a beginning of a hospital system. The hospital for convalescents, recommended by the Commission, should be built as soon as the finances of the city will permit, and a duplicate of the plan proposed for the present site should also be erected in the northern section of the city as soon as the money can be had.

The changes from the plans as submitted by the Hospital Commission are: The removal of the nurses' building from the site, with the expectation of buying ground, before the completion of the hospital, adjacent to the hospital, for the nurses' building. The stable has been removed from the site with the expectation that the city would

provide for this building across the street. The boiler house and laundry have been combined into one building. The clinical building and dispensary have been put under one roof.

In this manner the ground has been cleared up and more space is available for the wards than was contained in the original plans. Aside from these changes there is little difference in the two sets of plans. The kitchen has been changed from Carroll Street to a place within the grounds. The octagonal wards were originally shown joined end to end; a study of the plans seemed to show it would be better to separate them and place them as shown in the new plan. These are the principal departures from the original scheme of the Hospital Commission.

The prospect is, he said, that it will be a great many years before we see the completion of these buildings, unless the city finds means to provide money, which do not now exist; or some of our wealthy and generous citizens donate the money.

He thought this was a fair field for the medical fraternity to induce their wealthy friends to donate wards for the city hospital which the city is not able now to build.

The city has now about \$250,000 for the purpose; about \$52,000 will be added to this sum next spring, and about the same each year, but the money on hand now is not sufficient to complete the buildings already authorized. The buildings now authorized by ordinance are the isolation ward, the octagonal wards, the surgical building, power house, laundry, and kitchen. Temporary arrangements will be provided to overcome the difficulty of having no administration building.

DR. ALBERT MERRELL regretted the departure from the original plans of the Hospital Commission, which contemplated erecting an acute hospital on the old City Hospital grounds, to be followed by a similar building in the northern portion of the city, and building a general hospital further out. The general outline is practically the same as in the original plan, except that the octagonal ward is three stories, and the isolation ward two stories instead of one. The internal arrangement is altered, but in some respects for the better. The basement addition is an improvement on the original plans, which were, however, only sketch plans and not intended to arrange details. It is

likely that the hospital needs will be unsolved for many years to come. He was glad to see this much of the hospital begun, however, as the present quarters are a disgrace to the city. The work accomplished there he considered remarkable under the circumstance, but remarked that "patients will, sometimes get well in spite of the doctor" and that may explain favorable results with our hospital conditions.

DR. L. NEWMAN thanked the Society for the courtesy extended him and the Society which he represented. St. Louis, he said, is notorious in being slow to advance. It was years before the city officials got out of the old barn on Eleventh and Market Streets, and years before the building, now the new City Hall, was in shape to be occupied. It is now something like six years since the tornado, and the hospital has been forced from one lot of sheds to a worse. It is to be hoped that the action of the Society to-night and in the past will bear fruit by getting not only the medical men but the progressive business men of the city together and in that way possibly hasten the work which is probably the most worthy work any community can enter into and certainly the most worthy any community needs. The hospital facilities are so poor that we dare not take visiting medical friends there, and it is to be hoped that at no distant date we shall see a consummation of the plans now urged.

MR. LONGFELLOW, at the request of the members, explained the plans of the two octagonal wards.

Each ward is an octagonal room 62 feet in diameter containing 24 beds. It has light on all sides and a sun room on the southwest and southeast. In the center is a ventilating shaft carrying air from the wards. The buildings are connected by a corridor near the center of the rectangle. There are two rooms next the wards for linen and the patients' clothes, toilet-rooms and nurses's closets; there is on one side a stairway and an elevator; on the other side is the serving room and elevator for bringing up fuel, etc. The serving room is fitted up with steam tables, gas stoves, sink, refrigerator, and china cases. Next to the serving room is the dining room. Beyond this is a dressing room for dressing wounds and for minor operations. On the other side are two isolation wards—small rooms with two beds in each—for the separation of patients from the general wards. The octagonal wards are

three-story buildings; the connecting corridor is one story high; the roof of the corridor connects with the second story and forms a promenade; the third story does not connect with this corridor, but in its place there are balconies where patients can get the sun in pleasant weather. The ventilation of this and all the other wards is to be with air warmed by steam by the indirect method. Air is admitted under the window and taken out from the center of the room. The air is warmed on steam coils in the basement and conveyed to the rooms and drawn out of the rooms in the center by means of fans driven by electric motors. The distance between the beds in the ward is 3 feet.

DR. W. E. FISCHER objected to the flue in the center of the room, saying it would obstruct the view of the nurses and they would not be able to see all the patients.

MR. LONGFELLOW acknowledged this, but said it was the nearest approach to perfect ventilation.

DR. FISCHER asked Mr. Longfellow if he considered the arrangement in the Childrens' Hospital of Boston a good one.

MR. LONGFELLOW said he did not know what that was.

DR. FISCHER said the system there was a very excellent one. He had not given a great deal of time to the study of ventilation, but he knew the wards in the Childrens' Hospital of Boston were as sweet as could be. There are from 20 to 40 children in a ward there and nothing could be more delightful than to visit the institution. In the wards there is an unobstructed view of all the patients. This ought to be considered. It is true of all the wards of all the hospitals that he had visited; it is so abroad, and in the Presbyterian Hospital in New York the system is especially good.

MR. LONGFELLOW said the ventilation in the Presbyterian Hospital is good. It is a forced ventilation, the air being forced into the rooms and drawn out by fans.

Continuing the explanation of the plans, Mr. Longfellow said the isolation building, which occupies the space on plan indicated by letter A, has a small ward in the south end in the form of a half octagon. There is space for nine beds. On one side is the linen room, on the other side is the serving room. There are toilet and bath rooms, and a room for two nurses. There is a corridor separating this portion

from the remainder of the building. The remainder of the building contains ten rooms for patients, with two beds in each; two rooms for nurses each with two beds, toilet rooms, linen room, a serving room, and an operating room. These patients' rooms are each provided with a water closets and fire-place. This building is detached from the others. The method of ventilation is similar to that of the octagonal ward. The air is admitted below the window and drawn out from the center of the room. In two of the rooms it is intended to provide a place for portable tubs supplied with hot and cold water, so that a patient may be kept in water as long as desired. The building is two stories high. In the basement is arranged a waiting room for visitors with facilities for changing the clothing if desired. The small ward has the same ventilating arrangement as already described—the center flue. He believed this the best way to secure perfect ventilation, though he was sensible of the objection raised to it.

MR. ITTNER said he was interested, as all citizens should be, in the City Hospital situation. The fact that we can not build a million-dollar hospital outright should not discourage us if we can make a good beginning. We know that all large undertakings on the continent are not the work of a year or two years, but sometimes the work of a quarter of a century; but the work is all laid out in the beginning and carefully planned, and though it may be added to year by year, it is finally completed in the spirit of the original plans. We are told that the original Hospital Commission laid out an elaborate scheme and he was happy to hear Mr. Longfellow say there had been no radical departure from that scheme. He was glad also to hear Dr. Merrell, who had examined these plans, say they did not differ materially from the original scheme.

DR. MERRELL said the difference in the scheme was radical, though the plans were not materially altered, except that the capacity was increased fifty per cent. on the same space of ground.

MR. ITTNER said we should not feel altogether disappointed. We are about to make a beginning in the erection of a city hospital, and he believed some of us would live to see the scheme as originally laid down fully accomplished. He had talked with Mr. Longfellow on the subject of heating and ventilating. He thought it would be better to

have the ducts conveying the hot air to the rooms placed in the inner walls. His experience in building schools had proved that ducts in outer walls become chilled and retard the flow of air, except in cases where the air is forced into the rooms by mechanical means. He believed in the mechanical system of heating and ventilating—the air is heated in the basement and driven to the rooms by means of fans.

MR. MONTROSE P. MCARDLE said he was not an expert on heating and ventilating, though he had studied the system in use in our public schools and he thought this a most satisfactory method. He thought the ventilating shaft in the center of the room ought to be omitted, as it was unsightly and obstructed a full view of the room. One objection to taking air from the outside and passing over coils to be heated, was that the air is full of dust and soot and especially so here six months of the year. This air should be filtered by being passed over a filter surface composed of wool with glycerine and water which takes up the soot and dirt and delivers the air comparatively pure and clean. He called attention to the fact that Mr. Longfellow was not a free agent in this matter and that the conditions under which he labors make it difficult for him to do anything at all, his position as Commissioner of Public Buildings taking up practically all of his time and making it impossible for him to study the matter as it should be. What he has done he has done at times snatched from his own leisure. He deserved great praise and credit for what he had accomplished, and the speaker hoped that he might not be supplanted in his position with the changing of the administration, believing the matter could not be in better hands.

MR. H. WILLIAM KIRCHNER thought it was not so much a question of ventilation as one of doing. If the city intends to spend a million dollars on a hospital he thought it should be built in such a way as to leave no room for criticism. The entire result, however, he said depended upon the physicians of the city and not upon the architects. When a patient is placed in charge of a physician that physician is responsible for the patient, and if a hospital is to be built he thought the physicians ought to be responsible for the building of it. He thought it would be a serious mistake to erect a number of buildings on so small a lot, or spend a million dollars on a hospital that would be a

failure. One of the most difficult things to accomplish, even with the greatest care a physician can take, is asepsis, and to crowd a surgical ward and a dead house to within 25 feet of one another he considered criminal. If the physicians would get together and prescribe the medicine the members of the City Council ought to take in this matter he thought they would take that medicine. The plans as now projected ought not to be carried out, and the physicians ought to get together and plan a hospital as it ought to be built and he believed they would get it.

DR. R. M. FUNKHOUSER said a mistake was being made in this question, but he could not see the remedy. There is not a city in the United States where the facilities are so poor, where accommodations are criminal, where life is at such an imminent risk as in the present instance. Many will recall that in the early part of last year a number of physicians waited on the City Council and it looked at that time as if we would get no money for a city hospital and that the money already put aside for this purpose would be turned into another channel. He firmly believed the protest of the physicians at that time prevented the Council from using this money for other purposes. The Assistant Counsellor had said there was no other way to obtain money to defray expenses except the use of this fund, set apart for a hospital, but it was not so used, and he believed if the physicians would take a stand and unite and work together they would accomplish something. He called attention to the recent meeting called in regard to the new amendments to which the representative citizens from the different walks of life were invited and said not a single physician, to his knowledge, had been invited to give his opinion on the needs and necessities of the city. He considered this a shame.

A number of physicians, himself among the number, went to the Mayor and asked permission to look over the plans and specifications. They met several times and looked over the plans and a number of improvements suggested. As a body and as individuals the physicians protested against the completion of the plans as now intended, in the manner intended, and on the ground intended. What kind of a showing will St. Louis make when the World's Fair opens with the claptrap and inadequate new hospital built on the old grounds for 600 patients?

Would it be sufficient if we have a World's Fair? It is claimed that one of the main objects in having a World's Fair is to erect structures that will be permanent. If we could get the men of wealth and influence in the World's Fair project interested to the extent that they would agree to direct or use their influence to have some of these buildings put up in an accessible place, permanently and subsequently used as hospital buildings, it might be a partial solution of this question.

DR. W. E. FISCHER thought it would be a mistake to erect a hospital to meet the needs of the city for five or ten years only. His ideas in this respect were in accord with Mr. Kirchner's. He believed a permanent structure large enough to accommodate the city's wards a quarter of a century hence should be erected. He had been privileged to become familiar with the plans as conceived by the original Hospital Commission and he thought he knew all that was in the minds of those gentlemen. A tremendous amount of time was consumed in the preparation of these plans and most stress was laid upon the construction upon the old City Hospital site a hospital for emergency cases only, and that the general hospital should be built further out in the western part of the city near the other eleemosynary institutions where there were to be a complex of buildings to answer all needs. He had visited some of the best hospitals in the East and he knew they had built not for present needs only, but had planned to have their institutions answer the needs of the cities for a long period in the future. The city, of course, is handicapped with a lack of money, but like Mr. Kirchner, he wanted to see a beginning. Let us do just as much as can be done, but in this beginning let us plan for the future. It has taken centuries to build the cathedrals of the world. He believed we could have a hospital started now, keeping always the needs of the future in view, and he hoped to see it begun, but he hoped it would not be with the idea that \$250,000 or \$500,000 would erect a structure such as is needed. The details of the building should be left to men trained in work of that kind.

PROFESSOR WILLIAM TRELEASE said that though neither an architect nor a physician, he had imbibed enough knowledge of both architecture and medicine from the discussion to believe that he saw the difference between an emergency hospital and a temporary hospital,

and that while the original plans of the Hospital Commission had provided for an emergency hospital in the heart of the city and a suitable hospital removed from the dirt and noise, the proposition for the construction of a city hospital now under discussion seemed to refer to a temporary hospital in the city, rather than either of these. He thought it might be well to dismiss for the present the hope of securing the general hospital desired, and recognizing that what is now about to be constructed is a temporary hospital, to make it as complete as possible for general use, but in such a way as not to interfere with its ultimate utilization as an emergency hospital when the general hospital should later be provided on a larger area and in a better place. If a million dollars or more are to be expended in installments, he agreed with others who had spoken, that it would be well to use this money as it became available—in the proper construction of parts of the hospital—so that after the expenditure of the entire sum a hospital worthy of the city and adapted to the purposes for which it is intended would have been secured. He did not favor the putting of so many buildings on so small a space of ground for anything but the needs of emergency construction, and especially he did not believe in having the dead-house within 25 feet of the other buildings and particularly close to the surgical wards. Ventilation of a hospital such as is about to be built would be a most difficult matter, as the air would be laden with inorganic as well as organic living and dead particles, and these would be a menace to life. While with proper planning and detail construction the grounds that it is proposed to use would be suitable for an emergency hospital, he thought the fact should never be lost sight of that the general hospital needed for the city ought to be constructed without unnecessary delay further out, where pure air and clean hospital conditions were possible. While looking toward the welfare of the poor fellow who has to go to the hospital, and giving him pure air to breathe, good nursing and medical attention, he thought we should go a little farther and think of the effect that beautiful surroundings have upon everybody, so that this strong adjunct to the service of the physician and the nurse might be available in building up the shattered health of the patient. He said, in conclusion, that he was not criticizing the work of the gentlemen who had made the present plans, nor

had he the slightest disposition to criticize them, as he understood that the plans were very good, but he did criticize and seriously protest against the building together of the buildings as now contemplated, unless this arrangement were distinctly understood to be the provision of a rather more ample emergency hospital than the original Commission had contemplated, with the equally distinct understanding that the physicians of the city would not rest until the necessary general hospital further out should have been secured.

MR. L. C. BULKLEY thought it would be necessary to change the ordinance under which the Building Commissioner was working, if the change suggested were to be carried out. The amended ordinance should provide for the construction of certain hospital buildings and appropriate money for that purpose, leaving the arrangement to the Building Commissioner and such experts as he would employ. He thought Mr. Longfellow was to be complimented on the showing he had made, as the ordinance had burdened him with conditions which made it a wonder that anything had been accomplished. He agreed with the other gentlemen who had spoken, that it would be a mistake to build the general hospital down town; it should be out where there is plenty of space and can be added to as funds were available. In regard to hospital construction, he said we should use as little material of a porous nature as possible. Clay products, glazed glass, and such material should be used; avoiding marbles, plaster, and such porous material, for the reason that they take up matter injurious to the health.

DR. GEORGE HOMAN shared the general regret that the scheme as proposed by the Hospital Commission should be departed from. He favored the two-story ward building, though the addition of a story to each of the surgical wards was perhaps not a very grave departure from right principles, and the addition of a single story to the isolation building need not be deplored. The objection to the shaft in the center of the wards in the octagonal buildings he thought a vital one; this should be avoided, if possible, and he believed it could be dispensed with and all the benefits of the ventilating shaft retained. He did not see the advantage of an octagonal ward except as a show feature. The Johns Hopkins Hospital had derived much advertisement from this feature, as everyone who visited the hospital was ready to speak of the

octagonal wards. If that is of surpassing importance it goes without saying that it should be retained. However, he doubted the utility of that form of ward; necessarily, the heads of the beds would diverge and the lower extremities brought together, and with an unavoidable tendency to overcrowding the lower ends of the beds would have to be swung from side to side to allow access to the patients' heads. This could only be remedied by arranging the beds with heads towards the center, and having a corridor along the outer wall. The square form of ward would subserve all purposes, with the center free, and the nurse would thus have an unobstructed view of the entire interior. There would be difficulty in securing an equable temperature and proper ventilation of a rotunda ward without drafts. This was commented upon very recently by some of those in charge of Johns Hopkins Hospital. Cross currents and drafts occur in spite of arrangements made for opposite purposes. In regard to taking air from the outside near the ground level, the objection urged that this would be laden with impurities is very weighty. He thought it would be better to have the intake at the top of the buildings rather than in the basement, especially where the buildings are grouped so near together and in an institution of this character. Straining the air is, of course, desirable.

The attitude of the profession in this hospital business should be one of grim determination; we should give the city authorities no rest, but insist upon having the means not only to carry to completion these projected buildings but the supplemental or general hospital adjacent to the other institutions in the suburbs, and the isolation hospital for infectious and communicable diseases.

As a matter of detail he had suggested to Mr. Longfellow the general substitution of rain baths for the stationary bath-tubs. The advantage of this would be economy of space, means, and time, and it would avoid the possible communication of cutaneous and exanthematous disease by carelessness in cleansing the tubs.

If the proposed scheme of erecting a state hospital should be carried through and a location secured near the city, he thought it might be well to go on with the construction of the emergency buildings, as now contemplated, and that the city should send its convalescent patients to the state hospital and pay for their care if the general hospital

recommended as a necessary complement to the emergency hospital can not be provided for at this time or in the near future.

DR. AMAND RAVOLD said a number of vital points had been brought out in the discussion. When looking over the plans a second time he saw the infection ward was placed right against the surgical ward and on the other side was the dead-house. This ought not to be. The original plan called for a two-story building to accommodate 420 patients, with a convalescent hospital in the suburbs. Somebody is guilty of increasing the number of beds from 420 to 920. A hospital is a place for a sick person to get well, and this is not going to obtain when a lot is overcrowded with buildings and the buildings overcrowded with patients. That, he said, is what these plans contemplated. Somebody in the Board of Public Improvements was guilty of this condition by altering the plans. If these plans are carried out and a hospital for 620 patients is erected, three stories high, we will have, when completed, a hospital resembling the Edinburg Hospital, which, as he had said before, is the worst institution of its kind in the world; we are imitating that structure—that is, we are going to build a hospital exactly like the worst one in the world. We expect to spend a large sum of money and why not get the best the world affords and even find improvements on what has been done. He thought the physicians should organize and try to have that ordinance repealed. This infection ward ought to be done away with. We all come in contact with infectious diseases and what is done? The case is reported and immediately the house is placarded. The patient has no escape; if he lives in a hotel, or if the business is carried on in the same building—like a grocery—the business is almost irreparably injured, and the city requires the placard. With a hospital for infectious diseases these people could be sent there and no harm done their business. This ward proposed provides for 56 patients. There is fully that number of infectious diseases in the city every day, so that this is nothing but a makeshift. It will take from twelve to fifteen years to build a hospital with the present rate of increase in funds and all that time the city will occupy the abandoned convent spending \$12,000 annually, whereas, if could take \$200,000 we could put up a very fine one-story building for the chronic and convalescents out in the neighborhood of the Poor

House. The City Charter is now too small for this city and it should be amended so that we could raise money on bonds or some feasible way. As it is now we are powerless to raise any funds for this purpose.

MR. LONGFELLOW said he was much impressed with what had been said by the gentlemen present. The statement made that we were about to build a hospital which would be one of the worst in the world was not encouraging. If this is so he thought now is the time for the President of the Board of Public Improvements and the Building Commissioner to be furnished with information as to what would be the most suitable building for that site. The work of clearing the site and excavating for some of the buildings is now in progress and if the plan adopted is not a good plan the work should be stopped immediately and the officers furnished with information for the erection of a suitable building. However, he thought there was a misapprehension on the part of some of the gentleman as to the change in the character of the institution from that contemplated by the Hospital Commission. His understanding of the situation is and has been since the work began, that this hospital will eventually become the emergency hospital, but that until a general hospital can be built this will have to serve as the City Hospital; when it becomes possible to erect the general hospital further out, this will be used only as an emergency hospital. The question of the height of the buildings—if the merit of the plans depend on that—is still open to revision where not fixed by ordinance. The isolation building is fixed by ordinance at two stories, the octagonal wards three stories, kitchen building three stories, laundry and boiler house one story, and surgical operating building one story. If there is any mistake in the height of these buildings the President of the Board of Public Improvements should be so informed at once. As to future construction of buildings, it will be far in the future at the the present rate of providing the funds, and it will be probably several years before the rectangular wards are built. He said he came to the meeting for information and he would be glad if anyone who had definite ideas as to what the city ought to have would formulate his ideas and present them to the President of the Board of Public Improvements and to him. He was anxious that the city should have a creditable hospital and one that is as good as can be had. He

had but one thought in the matter and that was to provide an institution as perfect as could be made with the money furnished.

DR. HOMAN said there was one point not brought out in the discussion and that was the fact that the octagonal ward is planned for four stories, with a certain class of patients to be placed on the fourth floor.

MR. LONGFELLOW said this was true. The rectangular portion of the octagonal building has a fourth story added in which are ten cells for the detention of patients. There is also a room for the attendant, a linen room, and toilet room. This is reached by stairs and elevator.

MR. E. G. RUSSELL said that in view of the fact that one of the principal changes from the original scheme as laid out by the Hospital Commission is the increase in the story heights and the crowding together of the buildings, and considering that the plan is practically completed and part of the work contracted for, something might be done by re-arranging the grouping of the buildings in such a way as to overcome many of the objections raised. He thought the dead-house could be removed and this would decrease the total number of buildings on the site. The present buildings might be placed further apart at no great expense and he believed the Board of Public Improvements and the Building Commissioner would be very glad to enter into anything of that sort, while if the scheme is condemned *in toto* it might result in all objections being ignored. He suggested that a committee be appointed which should take the plans and re-arrange the buildings in a suitable way and thought much might be accomplished by this means.

MR. MCARDLE said the physicians could depend upon the architects for any assistance they could give in this matter.

DR. NEWMAN, President of the St. Louis Medical Society, said the society he represented voiced the same sentiments and would co-operate with the Medical Society of City Hospital Alumni to the fullest extent.

REPORTS ON PROGRESS.

MEDICINE AND THERAPEUTICS.

Etiology of Typhoid Fever.

Charles H. Minor (*Pennsylvania Medical Journal*, November, 1900) states that the typhoid bacillus which is the causative agent of this disease and which was first described by Eberth in 1880, is a short bacillus, about three times as long as it is broad. It is actively motile, possessing eighteen to twenty locomotive organs in the form of delicate hair-like flagellæ.

This bacillus escapes from the body principally by the feces and urine, and may be discharged for weeks or even months after the recovery of the patient. Outside of the body it grows and proliferates, has strong resistance, can accommodate itself to environment, retaining its vitality for weeks or months, retaining its virulence after repeated freezing and thawing. They can be found in water, air, soiled clothing, dust, sewage, milk, etc., which have been contaminated by the discharges of those sick with typhoid fever, but can never be generated *de novo* in these substances.

The actual entry into the human system may be by way of air, food or drink, most commonly the latter.

Typhoid is not actively contagious like measles or scarletina and there is little danger in being simply in the immediate neighborhood of the patient. Infection may occur from the inhalations of dust containing the bacillus, but most commonly is derived from contaminated food or drink.

It is highly important that all discharges from a patient should be disinfected, and clothing and other articles soiled by the same, sterilized.

Diagnosis of Typhoid Fever.

J. I. Johnston (*Pennsylvania Medical Journal*, November, 1900) says that during the early stage of the disease a positive diagnosis very often can not be made, and its postponement is then rather creditable than derogatory to the skill of the physician. The gradual advent of the disease is one of its most familiar features, but it must be recognized that exceptions occur to this mode of invasion. Epistaxis, while common, is not pathognomonic.

When the tongue is red at the tip and edges, the dorsum covered with a yellowish-white fur which, in cases of moderate severity, becomes dry, brown and fissured; it is a symptom of considerable import, though a feature rather of the typhoid state than of this specific disease. A fairly constant feature is that the pulse-rate is slower than is consistent with the elevation of temperature; there is also a special tendency to dirotism. The characteristic temperature curve is usually to be observed, and temperature charts are a great aid to diagnosis, though variations are frequent, especially under hydratic treatment. Gurgling in the right iliac fossa is usually present, but has little significance; tenderness on pressure is of more importance. Enlargement of the spleen has a much greater bearing on diagnosis; this organ, always enlarged, is also frequently tender.

His recent records show about an equal division between constipated cases and those having even a slight diarrhea, but some distention of the bowels is always present. Retention of urine with febrile albuminuria frequently occurs early. He attaches so little importance to the so-called diazo-reaction that he has ceased to make the test. The characteristic rash is a most reliable diagnostic sign. The Widal reaction is so far constant that 96 per cent of cases present it at some period of the disease.

To summarize, he considers the most important factors in diagnosis to be the gradual onset, a pulse slower than is consistent with the temperature, the enlarged spleen, the eruption and the Widal reaction.

Diet in Typhoid Fever.

James Tyson, of Philadelphia (*Pennsylvania Medical Journal*, November 1900) says that in the vast majority of cases milk is the

safest and most satisfactory food. As to the quantity, it may be put down for an adult at from four ounces as a minimum to eight ounces as a maximum every two hours. If there is a diarrhea the milk should be boiled or peptonized; if the stools contain undigested casein the quantity of milk is too large and must be reduced.

A variation from a strict milk diet may be required where the patient has an insuperable objection to it, or where it causes constipation. In such cases we may add or substitute buttermilk, animal broths or peptonized foods. He finds in some cases a satisfactory nourishment in albumen water—the whites of two eggs mixed with a pint of water.

The occurrence of hemorrhage calls for a reduction in the amount of food or its complete withdrawal for a number of hours. He recommends that, as a rule, only such food as has been mentioned be given during the fever and until the temperature has been normal for one week; then he allows one soft-boiled egg. If nothing happens in 24 hours after this he allows one egg daily; then after two or three days a piece of soft milk toast with the egg; then a small quantity of well cooked rice or oatmeal, and after a few days more a small piece of steak or a few raw oysters.

Treatment of Typhoid Fever.

Alfred Stengel, of Philadelphia (*Pennsylvania Medical Journal*, November, 1900) begins with the admission that we have no specific remedy and that the indications are simply to support the system, obviate complications, control fever, nervous manifestations and certain other symptoms that may become exhaustive, and thus aid Nature in combating the infection and products.

The most powerful therapeutic measure for the stimulation and support of the system is the application of some form of hydrotherapy. In his own experience in hospital practice the Brand method is generally employed, though some cases are treated otherwise. Among absolute contraindications to the bath are peritonitis and intestinal hemorrhage, and certain complications, as peripheral neuritis and abscesses may make it so painful that its use must be suspended. The temperature of the bath must be varied to suit the case. In anemic or nerv-

ous individuals or children the same benefit may be derived with a temperature of 80° or even 90° as in other cases with one of 70° .

His custom has been to tub every three hours provided the temperature was above 102.4° , if below this and above 101° he ordered the patient sponged every three hours, and if below 101° , two or three sponges a day are given.

When a medicinal stimulant is needed he prefers alcohol in the form of whisky, brandy or champagne, as a rule, it should not be given until the first heart sound shows evidence of weakness, the pulse grows feeble or the nervous system shows loss of tone. Next in value he places strychnia, which he usually gives in conjunction with alcohol,— $\frac{1}{60}$ to $\frac{1}{30}$ gr. four times daily, with 2 or 3 ounces of whisky or brandy per diem in divided doses sufficing ordinarily. He also has been favorably impressed with the simultaneously stimulating and quieting effects of camphor, which he gives hypodermatically, 1 grain in 15 minims of olive oil every two to four hours, in certain cases.

Antiseptics are to be used in the event of intestinal complications, but our principal reliance for the prevention of these must be a properly selected diet. He has found turpentine beneficial in cases of tympany accompanied by diarrhea.

In case the nervous systems are not controlled by bathing and stimulation, he finds opium in very small doses most useful. Codein or hyoscin sometimes acts very well as substitutes.

As to the specific serum treatment of this disease, no useful results have been reached. It is certain that no curative serum has been thus far produced.

HOGG.

SURGERY.

A Study of the X-Ray Plates of 140 Cases of Fracture of the Lower End of the Radius.

E. A. Codman (*Boston Medical and Surgical Journal*, September 27, 1900) found that his 140 cases could be separated into ten or more distinct types according to the line of cleavage and form of displacement. The author's classification is made more plain by drawings

which illustrate each form separately. A true Colles' fracture was found in but 46 per cent of the cases. Concomitant fracture of the styloid process of the ulna occurred in from 62 to 86 per cent of these 140 observations. In conclusion, Codman states that all statistics on Colles' fracture are worthless unless the cases have been subjected to examination by the X-ray.

Suprapubic Retrocystic Extraperitoneal Resection of the Seminal Vesicles, Vaso-Deferentia and Half of the Bladder.

Young (*Annals of Surgery*, October, 1900) had a patient 48 years of age, who had suffered for years from obscure prostatic trouble. A suprapubic cystotomy was made and the extent of the disease accurately determined. The recti muscles were split to afford more room, the peritoneum stripped from the bladder and the viscus separated from the rectum far enough to expose the seminal vesicles; these latter with the vasa-deferentia were found to be diseased and were excised as far out as the inguinal rings; along with them was removed the diseased posterior wall of the bladder. Complete closure of this viscus followed and the superficial as well as deep wounds healed without incident; at the end of two weeks, however, there was a slight leakage from the bladder.

Intracranial Removal of the Gasserian Ganglion.

Dallinger (*Centralblatt für Chirurgie*, No. 44, 1900) found that the foramen spinosum lay in front of the foramen ovale in 6 out of 100 specimens; while in 35 of 100, the foramen spinosum lay to the other side of the foramen ovale. In but 59 out of 100 cases did the foramen spinosum lay behind the foramen ovale, the distance between them varying in these cases from one to eleven millimeters. So the author concludes that the ganglion should be approached from the *anterior portion* of the temporal fossa, in which case it will, he thinks, be possible to remove it without injury to the artery, in 94 per cent of all cases. Thus it would seem that Dollinger had proceeded with very much the same idea in view as had Cushing, whose first article appeared in April, 1900.

The Hungarian surgeon did his first operation in March of the

same year, consequently, the two men are to be given credit equally for having, independently of each other, disposed of the chief drawback to the Hartly-Krause operation.

The reviewer has very recently learned, by personal experience in two of these operations, the true value of a method which affords comparative security in the vicinity of the exposed and pulsating middle meningeal artery.

Essential Factors for the Cure of Hernia in the Male.

Marcy (*Journ. Am. Med. Ass'n*, December 22, 1900) says that one in every ten or fifteen male adults is the subject of hernia. The author gives a detailed description of the mechanics of hernia and his own reasons for advising against a truss in most cases. His operative method is very similar to that of Bassini, with the exception that absorbable suture material was used. He claims an operative experience of about five hundred cases, of which about 90 per cent have been cured.

Operative Treatment of Goitre.

Warren (*Boston Medical and Surgical Journal*, December 27, 1900), after describing the technique of removal of the thyroid, says that it is sufficient if a piece the size of an English walnut be left behind. Especial care must be taken that the ligatures in the part of the body do not slip off through the movements of the patient after operation. The author's personal experience in exophthalmic goitre have not been at all satisfactory.

The Surgery of the Gasserian Ganglion.

Neff (*N. Y. Med. News*, December 19, 1900) begins his article with a short sketch of the different surgical methods which have been tried in the treatment of trifacial neuralgia. He next takes up in order anatomy, etiology, pathology, diagnosis and treatment by the removal of the gasserian ganglion. The valuable part of the article is in reality only a recital of what Cushing has taught us.

BARTLETT.

BOOK REVIEWS.

Syphilis and the Venereal Diseases. A Manual of Syphilis and the Venereal Diseases. By JAMES NEVIN HYDE, A.M., M.D., and FRANK HUGH MONTGOMERY, M.D. Second Edition, Revised and Enlarged. [W. B. Saunders & Co., Publishers, Philadelphia, Pa. 1900. Price, \$4.00 net.

By the revision of the first edition the authors have advanced this work to the present times and have given to both student and practitioner a practical exposition of what is known relative to the etiology, diagnosis, and treatment of the diseases mentioned in its title. The text is clearly and concisely written and the authors are to be congratulated upon the neatness with which the publishers have executed their work. In its revised and enlarged form, this work most certainly deserves the popularity bestowed upon the first edition. BURNETT.

Cancer of the Uterus—Its Pathology, Symptomatology, Diagnosis, and Treatment; also the Pathology of Diseases of the Endometrium. By THOMAS STEPHEN CULLEN, M.B., (Toronto), Associate Professor of Gynecology in the Johns Hopkins University. With eleven lithographic plates, and over three hundred colored and black illustrations in the text, by Max Brödel and Herman Becker. [New York: D. Appleton & Co. 1900.

This book completes the subject which was so exhaustively taken up in Kelly's "Operative Gynecology." The present volume is similar in finish, size and sense to the two which have preceded it. The same standard of excellence is apparent in every particular. The diction is of high class, and of the illustrations too much cannot be said in praise. The general aim of the work is to render possible an early diagnosis in many more cases than hitherto. The author's idea seems to be chiefly that of impressing the general practitioner, who is the first to see all these cases. Recognizing the value of combining what is learned from the clinic and autopsy, Cullen has endeavored to teach us, all that the

Johns Hopkins Hospital has produced in this line, as well as to point out the conditions which might be confused with cancer.

The illustrations may well be said to represent the highest possibility in this art; they portray anatomical relations, pathological conditions, operative procedures and the various appliances needed in their management.

While the book is hardly suited to the student's use and was probably never intended for him, it must prove valuable to the family physician as well as an absolute necessity to the gynecologist.

One of the important points which the book makes clear is especially deserving of mention here, viz., the immense advantage which the abdominal route has over the vaginal in many cases of carcinoma of the cervix.

The information imparted by that part of the work which relates to microscopical study is alone worth what it costs. BARTLETT.

A Text-Book Upon the Pathogenic Bacteria. For Students of Medicine and Practitioners. By JOSEPH MCFARLAND, M D., Professor of Pathology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Medico-Chirurgical Hospital, Philadelphia; Fellow of the College of Physicians of Philadelphia, etc. Containing 142 Illustrations. Third Edition, Revised and Enlarged. Price, Cloth, \$3.25, net. [W. B. Saunders & Co., Publishers, Philadelphia. 1900:

In no field of medical science has there been discoveries of such vast importance as in that of bacteriology, and this applies not only to the physician but likewise to manufacturing and agricultural interests. Its realm is a wide one, and the author well says that the gradual but steady specialization that has taken place in bacteriology, especially in relation to the public health and industries, has given much information upon the infectious diseases, their etiology, diagnosis and treatment; the infectious diseases of the lower animals and their danger to man; the proper source and preparation of water for public use; the disposal of sewage; the protection of the consumer against polluted milk; the means of artificially ripening cream and flavoring butter and the protection of canned goods from contamination during manufacture, that it has become a serious problem to know how much

can safely be left out of a text-book and just what must be put in. The author has, however, confined himself more or less carefully to the bacteria pathogenic to man and these are described with a thoroughness and completeness that makes it a most meritorious work on this interesting subject.

The chapter on immunity and unsusceptibility contains the most recent theories regarding these little understood conditions that vary in each individual. The chapters devoted to tuberculosis, diphtheria, tetanus and plague, in which the greatest advances have been made recently, contain a description of these discoveries, and here, necessarily, much new matter has been added. The remaining chapters likewise give evidence of careful revision.

Clear in description and concise without brevity renders its subject matter easy of comprehension and makes it a book of especial value to those who desire a general and thorough working knowledge of bacteriology to supply their need for it in an active medical practice.

Infant Feeding in Health and Disease. A Modern Book on all Methods of Feeding. For Students, Practitioners and Nurses. By LOUIS FISCHER, M.D., Attending Physician to the Children's Service of the New York German Poliklinik; Bacteriologist to St. Mark's Hospital; Professor of Diseases of Children in the New York School of Clinical Medicine; Attending Physician to the Children's Department of the Westside German Dispensary; Fellow of the New York Academy of Medicine, etc. Containing 52 Illustrations, with 16 Charts and Tables, Mostly Original. 368 pages. Neatly Bound in Extra Cloth. Price, \$1.50, net, delivered, [F. A. Davis Company, Publishers, 1914-16 Cherry street, Philadelphia.

It is difficult to estimate the value of this book. One of the triumphs of modern pediatrics is percentage feeding of infants. But he gives it no credit. Laboratory feeding is not recommended. His own rules of feeding are exceedingly indefinite. Whey mixtures are not mentioned. He gives Coit's Decimal Method a high place, but this method is certainly less convenient than the ordinary method of "tap milk."

We believe it is dangerous to add glycerine to milk; it certainly

can not take the place of sugar, which the author seems to infer; sugar is added to milk for other purposes than to sweeten it. His statement that cows' milk is intended for a cud chewer, seems to bear the idea that calves chew the milk again. Calves do not chew the cud until they eat grass. The enzyme, chymasin is also found in the infant gastric juice, and milk is not normally curdled in an infant's stomach by the acids present, as he asserts. We are glad to see that he recommends clean raw milk as the ideal milk.

The chapter on wet-nurse is very good. Much in this book is quoted from recent literature. The author highly recommends Gaertner's Mother-milk, and he reports his experience with it quite extensively. The Backhaus' Milk, Lahmann's Vegetable Milk, buttermilk, and various patent foods are discussed.

The treatment of colic, constipation, athrepsia and rickets is appended; to this is added an extended dietary list. It is not clear why such diseases as gastro-enteric infections, enterocolitis and colitis are not included.

While this book is supposed to be an up-to-date guide in substitute infant feeding, and does contain many things valuable, it is rather incomplete.

ZAHORSKY.

Saunders' Pocket Medical Formulary. With an Appendix containing Posological Table Formulæ and Doses for Hypodermic Medication, etc. By WILLIAM M. POWELL, M.D., Author of "Essentials of Diseases of Children," Member of the Philadelphia Pathological Society, Etc. Sixth Edition, Thoroughly Revised. Price, Leather, \$2.00, net. [W. B. Saunders & Co., Publishers. Philadelphia. 1900.

This is a handy volume of pocket size, bound in leather and contains a number of excellent formulæ under the name of each disease, which are arranged alphabetically. Between the pages occupied by printed matter, have been left blank leaves for additional notes, while a marginal index renders it easy of reference. It contains in addition, a list of poisons and their antidotes, the measurements of the female pelvis and the fetal head, an obstetrical table, diet lists, directions for the preparation of surgical dressings, the methods of resuscitation in cases of drowning, the incubation stages of the eruptive fevers, and a

table of the metric weights and measures. It is a good pocket reference book.

Modern Surgery—General and Operative. By JOHN CHALMERS DACOSTA, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital, and to St. Joseph's Hospital, Philadelphia. With 493 illustrations. Third edition, revised and enlarged. [Philadelphia and London: W. B. Saunders & Co. 1900. Price, Cloth, \$5.00; Half Morocco, \$6.00.

This is in some respects the best book of its size in our surgical literature—a statement which is borne out by reference to such chapters as those on the treatment of chloroform vomiting, intravenous saline injection, and many other subjects.

The illustrations are profuse, being 439 in number, though not executed in the best possible manner.

This book, which began a few years ago as a students' compend, has now attained the dignity of a 1117-page volume. While it is still suited to the students' requirements, it can now be classed among the hand-books which must needs be found on the shelves of the progressive doctor. The author's avowed intention was to furnish a work which should take the middle place between the complete text-book and the compend. As a fundament of asepsis, the principles of surgical bacteriology have been briefly considered. The well-recognized surgical specialties have been excluded, and only that part of orthopedics taken up which forms a part of the daily work of the average practitioner.

BARTLETT.

Manual of the Diseases of the Eye for Students and General Practitioners. By CHARLES H. MAY, M.D., Chief of Clinic and Instructor of Ophthalmology, Eye Department, College of Physicians and Surgeons, New York. With 243 original illustrations, including twelve colored plates. [New York: Wm. Wood & Co. 1900. Price, \$2.00.

The author's work has the special merit of being brief and clear. It claims to be a means of supplying only a foundation, to which further knowledge may be added by referring to more extensive and comprehensive text-books.

SHOEMAKER.

Rhinology, Laryngology, and Otology, and Their Significance in General Medicine.

By E. P. FRIEDRICH, M.D., Privatdocent at the University of Leipzig. Authorized Translation from the German. Edited by H. HOLBROOK CURTIS, M.D., Consulting Surgeon to the New York Nose and Throat Hospital. Three hundred and forty-eight pages. [Philadelphia and London: W. B. Saunders & Co. 1900. Price, Cloth, \$2.50.

We quote the following from the preface: "In these days of specialism there is a laudable tendency to tighten the bonds that unite the daughter to the mother science. On every hand we see the publication of works destined to show the correlation between various branches of medicine, and to awaken the interest of representatives of the various specialties for one another's work by defining the lines where the respective provinces meet. The present book belongs to this category."

This is eminently a valuable work for the specialist who sees little outside of the anatomical region to which he gives special attention. But for the general practitioner, also, it has a great value, since it acquaints him with the modern advance in oto-laryngology. It is not a work that gives definite diagnostic and therapeutic instructions, but rather a treatise on the general principles which underlie the recognition and prevention of diseases of the upper respiratory passages.

The "stomach cough," which was formerly held to exist, is dismissed on both theoretic and clinical grounds, but he admits that intestinal irritation may produce a desire to sneeze.

He fails to lay any particular stress on laryngeal stenosis following measles. It is also unfortunate that the word diphtheritic is chosen instead of pseudo-membranous. The former term is frequently used when evidently no reference to a Klebs-Loeffler infection is intended.

One is surprised, however, in finding that malaria causes hydrorrhea and otitis.

In giving the various theories as to the way in which the larynx in tuberculosis becomes invaded he is unable to draw any definite conclusions.

A very valuable section is that on "General Remarks on the Aural Disturbances Produced in Diseases of the Central Nervous System."

Much interesting and new material is found in the various chapters treating of nervous diseases.

This is certainly a very progressive work.

ZAHORSKY.

A Treatise on Diseases of the Nose and Throat. By ERNEST L. SHURLY, M.D., Vice-President and Professor of Laryngology and Clinical Medicine, Detroit College of Medicine, etc. Octavo, pp. 744, with index, Two hundred and twenty-three illustrations and six colored plates. [New York: D. Appleton & Co. 1900.

The author states that this volume has been prepared for the perusal of the general practitioner and medical student rather than for the specialist in laryngology.

The opening chapter deals with the anatomy of the upper air passages; the description, which is excellent, is made still more clear by several beautiful illustrations. The physiology of the upper air passages follows. A very good chapter is that on examination of the upper air passages, which gives the various methods in a clear manner. The first two chapters certainly fulfill their purpose.

The diseases of the nose and throat are then discussed. The author still ascribes to "cold" the principal place in the etiology of the acute inflammations, such as acute rhinitis, pharyngitis, and laryngitis. A difference is ascribed to influenza and la grippe, which is hardly in accord with modern ideas. He also considers changes in the weather as potent in the outbreak of influenza.

The article on diphtheria is given almost entirely from the standpoint of the general practitioner. The etiology of acute follicular tonsillitis is given as an infection in conformity with modern investigation.

Acute glandular fever is discussed, but from the description it is obvious that he refers to the ordinary acute cervical lymphadenitis, and not to the epidemic glandular fever, as described by Pfeiffer and others.

An excellent chapter is the one on ozena.

Altogether, the therapeutic suggestions are excellent, and this book really excels in that it gives general and very practical methods of treatment. His description of diagnostic procedures is very clear. A practical formulary for various local remedies is appended.

The general practitioner will find this a very satisfactory work on this subject.

ZAHORSKY.

NOTES AND ITEMS.

Lengthens Its Session.—In compliance with many requests, the faculty of the New Orleans Polyclinic has decided to continue its session until May 31, instead of May 11, 1901, as announced in their catalogue.

The Southeast Missouri Medical Association will hold its Twenty-sixth Annual Meeting at Charleston, Mo., May 7, 8 and 9, 1901. A varied and attractive program has been prepared and an interesting meeting is promised. The profession generally are invited to attend.

Dr. Geo. J. Engelmann Elected President of the Boston Obstetrical Society.—At the recent celebration of its fortieth anniversary, the Boston Obstetrical Society elected to its presidency Dr. George J. Engelmann of that city. Previous to his removal to Boston, Dr. Engelmann was one of the leading physicians of St. Louis, and his many friends here will rejoice that he has been the recipient of such a marked distinction from the oldest obstetrical society in America.

A Summer School of Medicine.—The Medical Department of Washington University, of St. Louis, will give a summer course of instruction in the various branches of medicine. These courses will consist largely of clinical work and laboratory instruction, though supplemented by a few didactic lectures on some subjects, and will extend from May 6th to July 6th. The opportunity thus afforded will be of especial value to physicians desiring to spend a few weeks in clinical and practical laboratory work.

The Death of Wm. R. Warner.—Mr. William R. Warner, the senior member of the firm of William R. Warner & Co., of Philadelphia, died at his home in that city on April 3, 1901. His name is a familiar one to the medical profession through a long business career as a manufacturer of well known pharmaceutical preparations. His life as a business man in his relations to the medical profession was that of the strictest integrity and honesty, and as such had won the respect and confidence of its members. His demise is to be regretted.

Women Physicians Lack Originality.—According to press reports, Dr. Victor C. Vaughn, Dean of the Medical Department of the University of Michigan, in a recent address on the subject of "Woman's Lack of Originality," expressed himself as follows: "In text-book work generally a woman student will make a better recitation than a man, but when it comes to relying upon personal judgment she nearly always fails in efficiency. There are brilliant exceptions to the rule, but when a young woman is thrown on her own resources in a laboratory she fails to come up to the standard set by the students of the opposite sex."

Physicians are not Compelled to Answer Calls.—On April 4, 1901, the Supreme Court of Indiana decided that a licensed practicing physician is not legally bound to attend any patient for whom he is called, although he may have served as family physician for the sick person's family in the past, and he is not liable for damages for refusing to answer calls. Suit had been brought against Dr. George Weddingfield in Montgomery County for refusing to attend the wife of one George D. Hurley, although called on three times, the last time by a preacher who offered to pay the fee in advance. It was charged that the woman's death was due to the lack of a physician's services and the doctor was sued for \$10,000 damages.

A Handsome Souvenir.—The Boston Medical Library has issued a handsome volume of the proceedings at the dedication of the new building on January 12, 1901. It contains the addresses of the President, Dr. David W. Cheever, and of the Librarian, Dr. James R. Chadwick, with the remarks of Dr. Francis W. Draper of Boston, Dr. William Osler of Baltimore, Dr. John S. Billings of New York, Dr. Horatio C. Wood of Philadelphia, and Dr. Henry P. Walcott of Harvard University, together with an editorial from the *Boston Medical and Surgical Journal*, of January 17, 1901. It contains also a series of cuts showing the various floor plans of the building. The book is printed on heavy paper, bound in embossed boards and is adorned on the first page of cover with an excellent half-tone of the building. It is a neat and attractive volume.

ST. LOUIS

COURIER OF MEDICINE.

VOL. XXIV.

MAY, 1901.

No. 5.

ORIGINAL CONTRIBUTIONS.

The Mesogastrium—Omentum Majus.

**From the Autopsic Abdominal Inspection in Three Hundred
Males, One Hundred and Fifty Females and
Sixty Children.**

By BYRON ROBINSON, B.S., M.D.,

CHICAGO, ILL.

(*Concluded.*)

THE FUNCTIONS OF THE GREAT OMENTUM—(MESOGASTRIUM).

1. It is the mesogastrium retaining the stomach in position on the dorsal abdominal wall and in relation to other viscera.
2. It is a neuro-vascular visceral pedicle.
3. It separates the tractus intestinalis from the anterior abdominal wall and thus prevents adhesion of the bowel loops which would check peristalsis and induce pain.
4. Vascularity (blood and lymph) is the characteristic of the omentum majus as well as all omenta and appendices. Its vascularity is entirely in excess of its requirements for existence. Hence the chief function of the omentum (mesogastrium) beyond its primary one as a fixation apparatus is accomplished through the vascular system. The omentum is an

instrument by which vast fields of the capillaries and lymph spaces are held in position which are separated from the general peritoneal cavity by the thinnest of membranes. The finest and most delicate distribution of vascularization is immediately under its surfaces and especially along its border, and, in fact, it is exactly at these points that the chief reaction

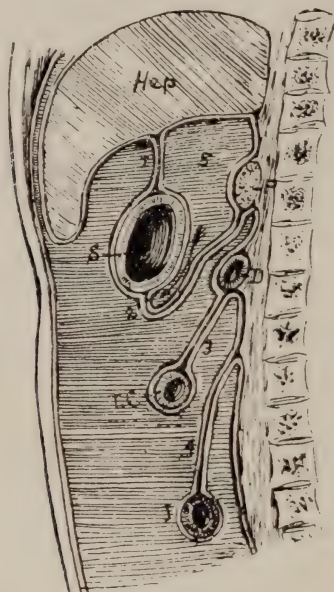


FIG. 12.—(Modified from Testut). Illustrates the great omentum and its relation to the transverse colon. *Hep*, Liver; *s*, Stomach; *i*, Gastro-hepatic omentum; *5*, Bursa omentalis; *p*, Pancreas; *2*, Gastro-colic omentum of the future in which is directed an arrow; *d* Duodenum; *3*, Mesocolon; *tc*, Transverse colon; *4*, Metenteron; *i*, enteron. The author does not indicate the lower anterior blade of the mesogaster and the upper (anterior) blade of the mesocolon is drawn out, but this figure suggests that these two layers coalesce.

occurs. However, this is a characteristic of all mesenteries and peritoneal appendages, because the peritoneum is a lymph sac. Exudation or absorption will always occur from fields rich in blood and lymph capillaries and lymph spaces; yet, as I demonstrated several years ago, neither the omentum nor pelvis

are the special localities for absorption because the function is controlled especially by the diaphragmatic peritoneum as it possesses innumerable stomata vera—organized mouths. A stream of fluid exists in the peritoneum directed toward the diaphragm.

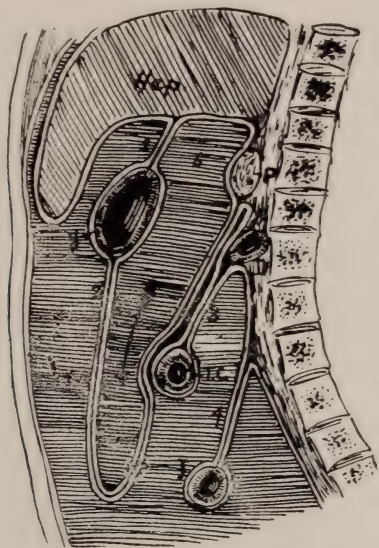


FIG. 13.—(After Testut, 1892, Modified). Represents the relations of the mesogaster and mesocolon transversum just before coalescence. The figure suggests coalescence of the superior blade of the transverse mesocolon and the anterior (lower) blade of the mesogaster. The displacement theory is not entertained in this sketch. *Hep*, Liver; *1*, Gastro-hepatic omentum; *5*, Bursa omentalis; *s*, Stomach; *p*, Pancreas; *d*, Duodenum; *3*, Mesocolon transversum; *tc*, Colon transversum; *4*, Mesenterium; *i*, Mesenteron. The arrow shows the mesogaster and the superior blade of the mesocolon would need to coalesce according to the figure. According to the displacement or re adjustment theory they would be drawn out.

5. The omentum regulates fluid currents in the abdominal cavity simply by its blood and lymph vascular capacity. It has no special function for this power except through its extensive and widely distributed blood and lymph supply. It will nourish other organs itself or produce collateral circulation by adhesions.

6. The omentum has the power to localize peritoneal inflammations. This function is accompanied by producing peritoneal adhesions as barriers. The power to localize infectious peritoneal invasion constitutes the chief utility of the omentum to man.

7. The omentum will plug apertures in both viscera and abdominal parieties. I posted the abdomen of a man who had been stabbed through the left pleura and diaphragm and the two apertures were plugged by a long cord of omentum. The omentum will close gastric wounds. I have shot dogs through the stomach with a 32 caliber and the omentum would sometimes plug the bullet hole so affectually that the dogs without surgical intervention would be eating and playing in a week. It serves as an excellent plug for enteronic and colonic perforation as well as a protector for other visceral wounds.

8. The omentum is an excellent tissue for repair in plastic surgery. It serves excellently for patch work in abdominal surgery. Large areas denuded of peritoneum may be covered by severed or unsevered omental scarified grafts. Visceral perforations and wounds are safely covered by omentum sutured in position over an area of dangerous suturing of damaged tissue.

9. The omentum tends to points of infectious invasion. This claim rests on physical facts and not on intelligence of the omentum. When any peritoneal area becomes inflamed the muscle associated with it becomes paretic and a state of quietude occurs in the inflammatory region. All other peritoneal areas retain their activity and, probably, from irritation, wild and disordered visceral movements occur, especially in the peristalsis of the enteron. The omentum floats in the peritoneal cavity like a raft upon water. Active peristalsis in any region will force the omentum into more quiet regions, which are the inflammatory ones in the paretic muscles. An example is the floating cork in whirling eddies; the cork will finally float in the most quiet area. Hence the omentum is like a policeman whose beat is the entire peritoneal cavity. It is like a man-of-war ready at a moment's notice to move—to invade ports. In other words, it checks invading infection, *e. g.*, by building forts as barricades. It is the surgeon's friend.

10. The rapidity of the adhesive process of the omentum to infectious points is closely associated with the remarkable adhesiveness of the leucocytes to the omentum in inflammation. The local rich accumulations of leucocytes on the

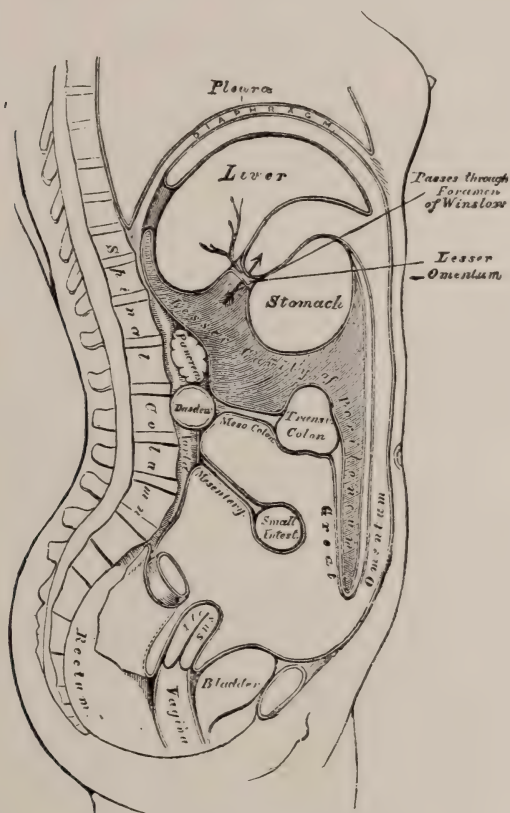


FIG. 14.—(After Gray, 1887). Omentum majus.

omental surface is the forerunner of fibrinous cementing of inflamed viscera and adjacent structures. When the omentum has once become attached by adhesions to adjacent organs it has lost its power, and like a crippled soldier or ship of war, becomes a pensioned prisoner.

11. It is a peripheral lymph regulating apparatus. The omentum majus, or mesogastrium, is a large segment of the expanded periphery of the lymph system, as the peritoneum

may be considered the chief periphery of the lymph system. It is a vast area where the lymph collections begin. The mesogastrium formed by ancient periodic changing factors as regards single viscera acts as a peripheral apparatus of the lymph system to regulate the fluid of the closed serous cavity. It aids in supplying the required fluid to permit perfect freedom of movement of visceral contents, to avoid trauma and, perhaps, to supply some nourishment to adjacent viscera. However, the mesogastrium is not a specialized peripheral lymph apparatus any more than the mesenteron. It is not

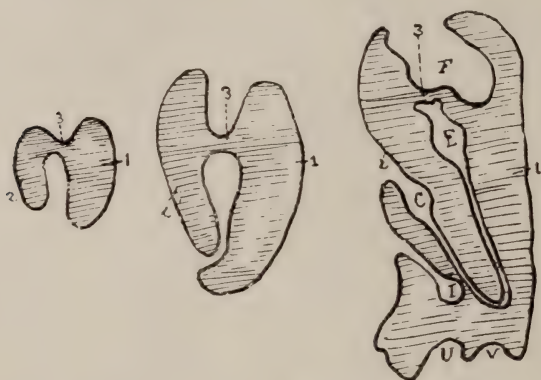


FIG. 15.—(After Debierre, 1890. Modified). Represents diagrammatically the development of the greater and lesser cavities of the peritoneum. 1, The greater cavity; 2, The lesser of the peritoneum; Hiatus Winslowii; 4, Stomach; 5, Liver; 6, Enteron; 7, Colon; 8, Uterus; 9, Bladder.

specialized to regulate peritoneal fluid as much as the diaphragmatic peritoneum, as that has specialized apparatus of the most perfect kind—stomata vera and perforations in the membrana limitans. If the omentum be crippled by fixation or rolling in a roll, or by removal, the peritoneal serous fluid is not seriously injured, because the remainder of the peritoneum assumes functional control.

12. Tait's idea, that by placing ascitic patients in bed if the mesogastrium be involved, the fluid will not disappear, but if it be free the fluid will disappear, lacks confirmation. In malignant disease of the peritoneum I never saw the fluid dis-

appear. In tubercular peritonitis in which the omentum has shrunk to a few tags floating in twelve to fifteen quarts of fluid recovery will occur so that the omentum has nothing to do with it. From my numerous experiments on dogs, rabbits and guinea-pigs, accompanied by careful microscopic examination, I am convinced that the omentum is not a special arbiter of peritoneal tides, but that that function belongs to the diaphrag-

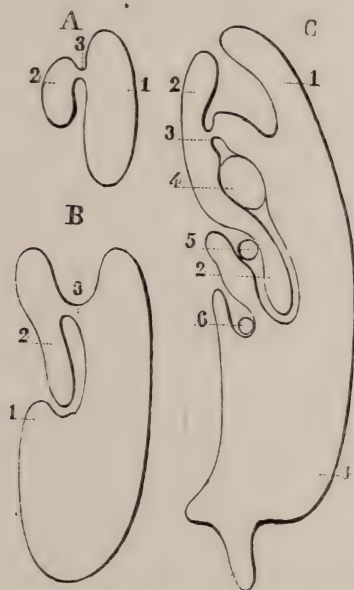


FIG. 16.—(After Sappey, 1889). Gives a diagrammatic illustration of the development of the peritoneal cavities. *A*, Shows the beginning of the two cavities; 1, Great omental cavity; 2, Lesser omental cavity; 3, Wisnslow's foramen; *B*, Shows the elongation and invagination of the smaller cavity (2); 1, Great omental cavity; *C*, Shows a vertical section of both peritoneal cavities.

matic peritoneum. The omentum, no doubt, aids to carry away from the inflamed point to which it appears to rush large amounts of fluid which serves to attenuate the culture medium for bacteria.

13. The omentum may be utilized to establish collateral circulation in ascites by forming a bridge between the portal and systemic venous circulation. The method to employ

would be to desquamate the endothelia from, say a square foot of omentum and also scarify a square foot of parietal peritoneum proximal to the umbilicus and fix by sutures the scarified omentum to the scarified parietal peritoneum. This

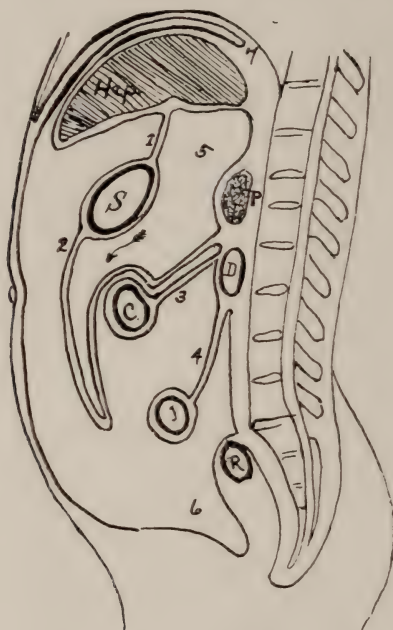


FIG. 17.—(Gegenbaur, 1884, German edition). It is chiefly to represent the views of an eminent comparative anatomist as regards the transverse colon and omentum. It may be observed that his idea is that of coalescence, for his mesocolon transversum consists of four layers (3); 1, Gastro-hepatic omentum; 5, Lesser omental cavity, pancreas; 3, Mesocolon transversum; 4, Mesentery; *d*, Duodenum; *c*, Colon; 2, Anterior layers of great omentum; 6, Great omental cavity; 7, Reflection of coronary ligament; *j*, enteron. However, Gegenbaur mentions in his textbook the displacement theory without committing himself.

method would establish collateral circulation through the superior epigastric veins. Dr. William Murrell reports in the *Medical Brief*, August, 1900, a case treated successfully by this method, which was initiated by Dr. David Drummond and Mr. Rutherford Morrison. Hepatic sclerosis with ascites

would be a typical subject in which to divert the lymphatic fluids in to collateral channels, *i. e.*, through the systemic circulation instead of passing through the portal circulation. The symptoms of recovery would be the dilatation of the veins over the epigastrium and thoracic parietes. Doubtless the recovery of patients after repeated paracentesis abdominis is due to some lymphangitis (peritonitis), resulting in large adhesions of some abdominal viscera to the parietal wall, establishing a collateral circulation relieving the peritoneum of its excessive fluids.

In future surgery the omentum may be used as a bridge to connect the portal and systemic venous circulation and especially to divert the fluids from the portal to the systemic circulation by means of attaching a large surface area of omentum to a large peripheral lymphatic area of the general circulation. The omentum should be attached to the parietes above the umbilicus to avoid possible future internal strangulation. We have many opportunities to try this method in tubercular lymphangitis (peritonitis).

14. The mesogastrium aids to prevent adhesions of intestinal loops to the anterior abdominal wall. This is more important to the horizontal, four-footed mammals than to the erect ones. In four-footed mammals the intestinal loops move more vigorously against the anterior abdominal wall than in man.

15. The mesogastrium aid to some extent to prevent the intestines from injury by allowing the loops to glide away from pressure. It generalizes pressure.

16. The omentum is not a special organ for the purpose of fat storage. It stores fat only after other regions are supplied and the fat disappears with that of other regions. If it were a specialized organ to store fat, hibernating animals, as the amphibia and bear, would possess special omenta and fat would be early deposited for the ensuing winter. The fat of the camel is stored in its "hump," and fat is irregularly deposited in the body of amphibia.

Fat accumulates and disappears in fascia. The mesogastrium has a peculiarly favorable kind of fascia, or fibrous network, in which accumulating oil-particles may form and dis-

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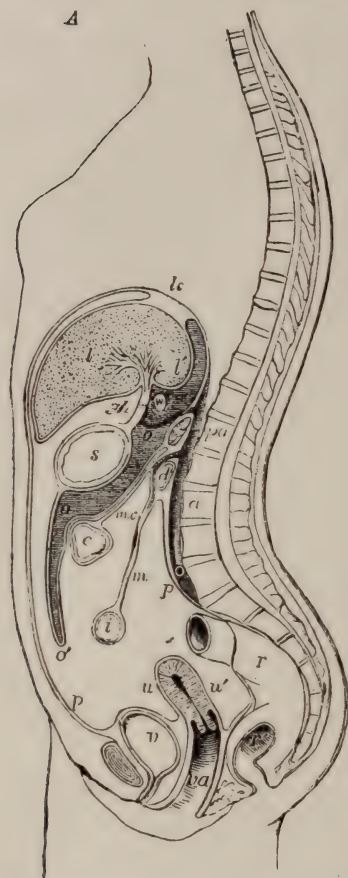


FIG. 18.—(After A. Thompson, 1882). The line representing the reflections of the greater sac of the peritoneum can be traced from the coronary ligament at *lc*, where it passes from the diaphragm to the upper surface of the liver, over the upper and under surfaces of that organ to the gastro-hepatic omentum, *gg*, it continues on to the front of the stomach down to *ol*, which is the anterior or descending double-bladed layer of the great omentum, thence it reflects on itself and passes to the vicinity of the pancreas, *pa*, whence, by displacement or being drawn out of the colon transversum, *mc*, becomes located between its blades (not by coalescence as indicated in the drawing). The lower blade of the mesocolon transversum, *mc*, now proceeds to the root of the mesenteron, *m*, where it envelops the enteron, producing the mesenteron and curves at the root again, making the left (under) blade of mesenteron.

tend the connective tissue corpuscles because adjacent conditions and pressure are favorable. In percussing the abdomen one must be on the alert to avoid being deceived by tympanic and dull sounds. For example, the distal end of the abdomen may be dull, with a large omentum thickly added with fat, while the transverse colon proximally may present disturbed tympanic sounds. In observing several thousand peritoneal sections no lipoma requiring surgical interference arose.

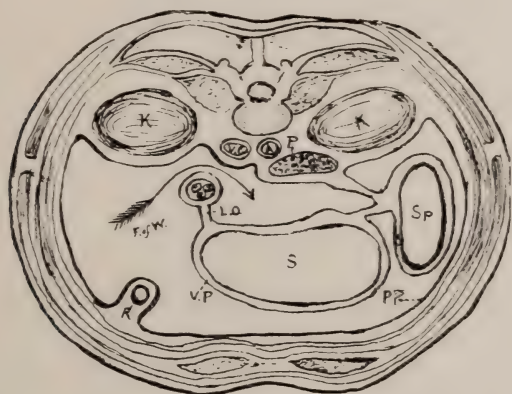


FIG. 19.—(Author). Presents cut to illustrate a cross section of the peritoneal cavity at a level of Winslow's foramen. *Pp*, Parietal peritoneum; *vp*, Visceral peritoneum; *S*, Stomach; *R*, Round ligament of liver; *Lo*, Lesser omentum; *P*, Pancreas; *vc*, Vena cava; *a*, Aorta; *K*, Kidney; *F of W*, Foramen of Winslow (the arrow points to the lesser cavity of the omentum). By this figure it will be noted that the spleen is uncovered in two strips, viz., hilus, and strip on posterior border.

The omentum majus (mesogastrium) is simply a mesentery produced by the changing size of the liver, and abetted by the final location of the spleen. Its final adjustment is due to rotation of the cecum and consequent coalescence of its blades with adjacent viscera. It has the same function as the mesenterion. Its size and freedom alone allows it more opportunity for apparently additional functions.

Record of the Inspection of the Abdomen in 270 Adult Males.

PER CENT.

1. Omentum extended into pelvis.....	25
2. Covered cecum.....	15
3. Did not extend to pelvic brim.....	45
4. Extended to pelvic brim.....	4
5. Rolled up behind transverse colon.....	25
6. Hernia (inguinal and umbilical).....	3

The chief fixation points of the Omentum in Lymphangitis
(Peritonitis).

1. Fixed to spleen.....	20
2. Fixed to pelvic organs.....	0
3. Fixed to ascending colon.....	5
4. Fixed to lateral abdominal walls.....	4

Record of the Inspection of the Abdomen in 100 Adult Females.

PER CENT.

1. Omentum extended into pelvis.....	53
2. Covered cecum.....	42
3. Did not extend to pelvic brim.....	40
4. Extended to pelvic brim.....	4
5. Rolled along transverse colon.....	18
6. Was in irreducible hernia.....	5

The chief fixation points of the Omentum in Lymphangitis
(Peritonitis).

1. Fixed to spleen.....	25
2. Fixed to pelvic organs.....	12
3. Fixed to ascending colon.....	3
4. Fixed to lateral abdominal walls.....	4

The omentum is now and then fixed to the colonic flexures, liver and stomach, and especially fixed to the longest range of action of the psoas, diaphragmatic and abdominal muscles; this is due to muscular trauma. For example, the omentum is frequently found attached to the right psoas where the transverse duodenum crosses the psoas and at the point where the appendix, cecum or distal end of the ilium lies on the psoas. Also adhesions are found on the left psoas where the sigmoid crosses the psoas, and occasionally proximal to this uncertain point. This is due to muscular trauma on the

segments of the tractus intestinalis inducing migration of pathogenic microbes through the mucosa muscularis and into the serosa (lymph sac). The omentum will become fixed where infection exists as on the infected points of the tractus intestinalis, on cysts, the ureters, gall-bladder, abdominal wounds, pelvic organs, bladder, urachus, liver and spleen.

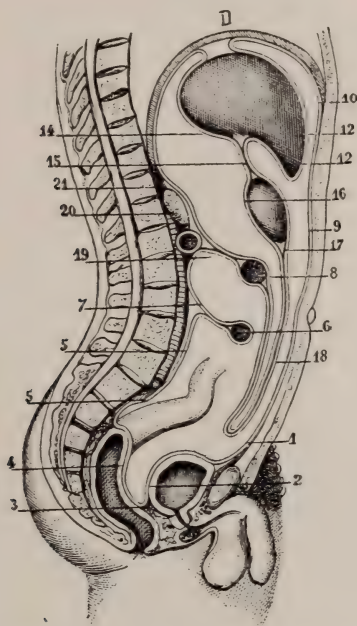


FIG. 20 —(After Sappey, 1889). 15, Gastro hepatic omentum; 16, Superior blade of lesser omentum covering posterior surface of the stomach; union of anterior and posterior blades which inclose the stomach (gastro colic omentum); 18, Great omentum (anterior and posterior blades of descending and ascending folds); 19, Mesocolon transversum; 21, A continuation proximalward over the pancreas of the superior blade of the transverse mesocolon.

The Position of the omentum from the above 370 recorded inspections of the adult omentum shows how variable it is. The position of the omentum is governed: 1, by the shape of the abdominal cavity (male or female); 2, by muscular action, for example, the omentum covered the cecum in 32 per cent

in females and only 15 per cent in males. The strong psoas in males projects the omentum into lines of least resistance away from the psoas. If it were due to a larger pelvis, as in females, the cecum would be covered less in them by the omentum than in males. But with a larger pelvis and more opportunity for gliding away from the psoas in the female,

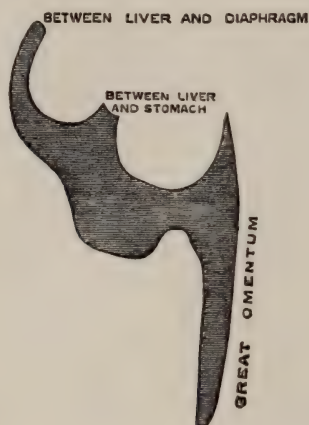


FIG. 21.—(Gray, 1877). Represents the shape and outline of the lesser omental cavity (bursa omentalis). It is diagrammatic. The lesser omental cavity I have divided into two cavities, greater and smaller. Winslow's foramen leads into the right smaller cavity, which contains Spigel's lobe of the liver (a viscus). Huschke's foramen leads into the great cavity which lies behind the stomach and contains no viscus. I named this foramen after Huschke because he was the first, so far as I am aware, to describe it, and I also consider Huschke's description of the peritonem in 1844 as the first and most scientific description of that organ. Either or both Winslow's and Huschke's foramen may become closed by inflammation.

still the cecum of females covered by the omentum over twice as often as that of males. 3, The position of the omentum is influenced by peristalsis of the tractus intestinalis, the tractus urinarius (bladder) and tractus genitalis (uterus). Some subjects have more peristalsis of the enteron than others and in subjects of vigorous and violent peristalsis of the enteron the

omentum will be found rolled along the transverse colon. In some such cases the whole omentum can be unrolled, no adhesions existing. Also in subjects of extensive distension of the colon transversum the omentum will be dragged proximally toward the colon. Besides, there is a numerous class of subjects in whom the sigmoid lies in the central portion of the

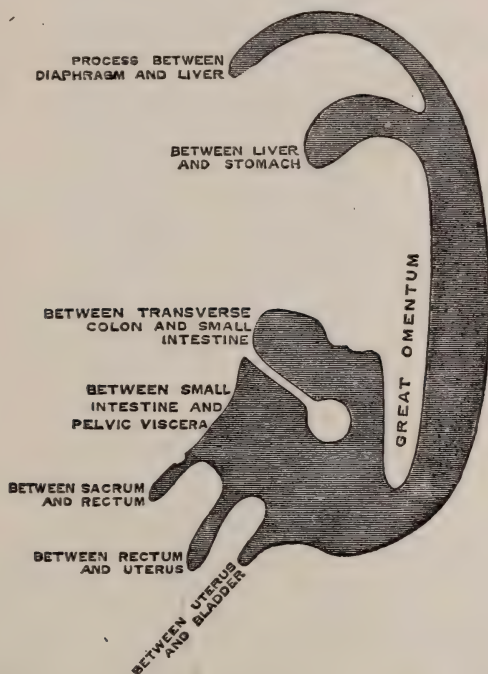


FIG. 22.—(Gray, 1887). Is to represent the greater cavity of the peritoneum, quite diagrammatic.

abdomen either in front, among, or posterior to, the enteronic coils, and during the wide distension of the flexura sigmoidea, the omentum is driven proximally along the transverse colon. Peristalsis of the enteron and colon is doubtless the reason that the omentum is lifted out of the pelvis and forced proximally so that its distal free margin extends only to the pelvic brim—(40 per cent females and 45 per cent males).

The rolling of the omentum along the transverse colon is due to irregular peristalsis of the colon and enteron. Finally,

lymphangitis may attack the rolled omentum and fix it along the colon. The omentum was found twice as frequent in the hernial rings in the 370 cases as the loops of the intestinal tract. However, there were quite a number of inguinal rings, so wide that both omentum and intestinal loops would pass in

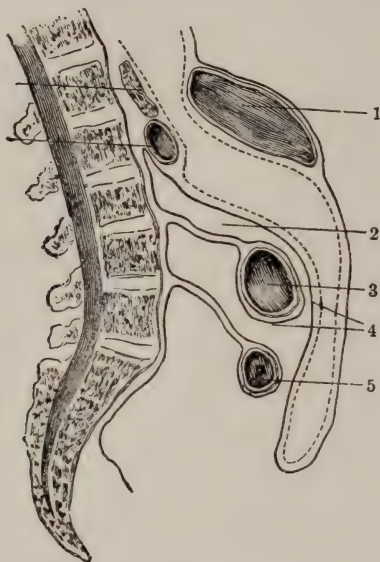


FIG. 23.—(After Cruveilhier). This cut represents the method of coalescence of the superior blade of the mesocolon transversum with the posterior (under) ascending blade of the ascending fold of the great omentum. The figure is to illustrate how the cavity, 2, (recessus peritonei) becomes obliterated by coalescence, *i. e.*, the two layers of the peritoneum forming a pocket, 2, unite their surface as far as indicated by the figure 4<. The three layers of of the peritoneum above the inferior blade of the mesocolon transversum coalesce.

and out of them with facility, according to bodily position. If the hernial rings were small the omentum becomes nearly always fixed by adhesion either at the neck or distal end of the hernial sac. This fixation cripples the omentum, destroying its mobility or its beat as an abdominal policeman. The present anatomic position and condition of the omentum is due to coalescence of its left blade to the dorsal wall and the coales-

umbilicus to the right iliac fossa, catching a part of the mesogastrium and carrying it with it into the right iliac fossa. The part of the omentum fixed to the right colon is known as Haller's omentum.

The Fixation of the omentum arises from the attack of lymphangitis (peritonitis). The omentum is fixed to the spleen oftener than any other viscus is shown by my defective

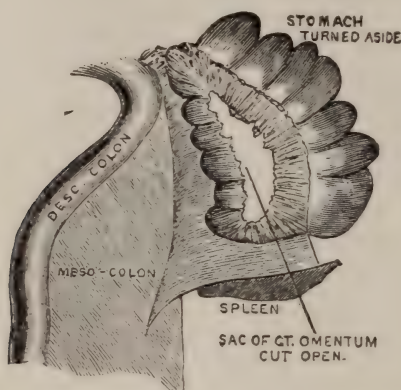


FIG. 25.—(After Treves). Represents a primitive condition of the great omentum found in the kangaroo. The omental sac is cut open to show that it has not formed a long pendulous omental bag, as in many mammals. In this animal the posterior mesogaster appears as if it were simply pushed slightly toward the left, forming a shallow, wide-open depression with no Winslow's foramen. The neck, or rather circumference, of the depression in mesogaster never contracted to form a foramen.

records. A curious feature of the record is that the omentum is 5 per cent more adherent in woman (25 per cent) than in man (20 per cent). Adhesions of the omentum to the spleen is due to muscular trauma of the diaphragm on the stomach inducing migration of microbes through the gastric mucosa muscularis and serosa into the serosa of the spleen. Adhesions do not form on the stomach because its active and frequent movements prevent. The same fact may be observed in the sigmoid. The trauma of the psoas muscle produces peritoneal adhesions on the mesosigmoid in about 80 per cent of subjects, but the sigmoid itself does not have so many ad-

hesions as the vigorous and frequent movements of the bowel segment does not allow sufficient time to form.

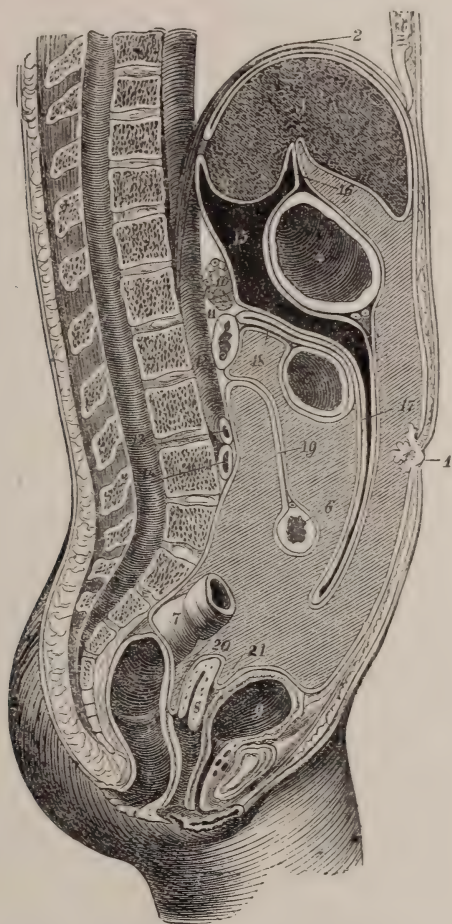


FIG. 26 —(After Luschka, 1863). 15, Bursa omentalis; 16, Omentum minus; 17, Omentum majus; 18, Mesocolon transversum; 19, Mesenteron.

The Fixation of the Omentum to the Pelvic Organs was 12 per cent in the 100 adult females, No case of fixation of the omentum to the pelvic organs in the 270 adult males. The omentum extends into the pelvis of the females more than twice as often as in males, and the female pelvis is infected

in about 80 per cent of the subjects. Hence the great liability for the omentum to become fixed to the pelvic organs. It is true that man suffers from gonorrheal vesiculitis seminales very frequently, as I demonstrated in 1891, and proved it repeatedly since, but the inflammation does not extend into the pelvic peritoneum to any great extent, and also the omentum



FIG. 27.—(Afer Abey, 1871). *h*, Colon transversum. Notice—Abey accepts the coalescence view of the union of the omentum and transvers mesocolon by the representation of four layers of peritoneum between the colon and dorsal wall.

extends into the male pelvis 25 per cent (in 270 cases). Hence the opportunity for the omentum to become adherent, in the male pelvis, is very limited. The 12 per cent of the omental adhesions in the pelvis were to the uterus, oviducts and ovaries. This does not include adhesions of the omentum to the pelvic wall independent of the female organs. In one case I saw Mr. Tait operate, in which an abscess at the proximal end of the oviduct, following parturition, was definitely circumscribed by the distal border of the omentum.

In abdominal section for existing pus collections it is not an infrequent occurrence to find the abscess controlled in one segment of its wall by the omentum, especially is this the case in pus collections adjacent to the perforated appendix. The

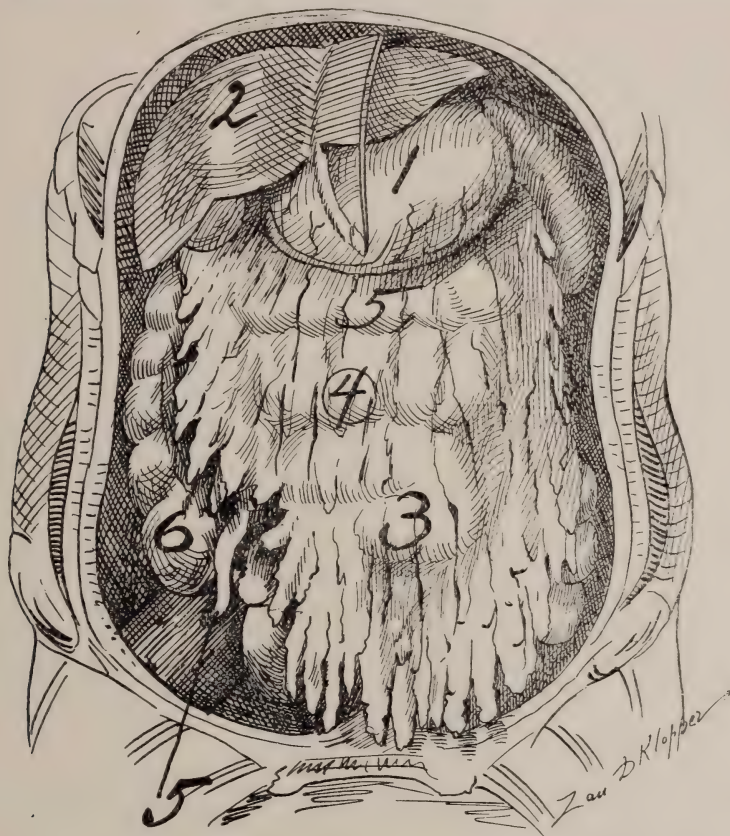


FIG. 28.—(Author). Shows a form of omentum with sigal outline. It does not cover the cecum or appendix. 1, Stomach; 2, Liver; 3, Omentum; 4, Position of umbilicus; 5, Appendix; 6, Cecum.

omentum, as every experienced gynecologists knows, is a great life-saving apparatus for women, that it is in the pelvis in more than half of the subjects, and since 80 per cent of adult women have pelvic peritonitis, the omentum is on guard for 40 per cent of pelvic peritonitis. The omentum not only guards sacredly, immediately single ports of the pelvic invas-

ion, as the pavilion of the oviducts, but it aids in rapidly matting together the loops of enteron and sigmoid into a protecting roof to prevent the proximal movements of the usual peritoneal fluid current toward the dangerous peritonitic area of the diaphragm. The two dangerous peritonitic areas are:



FIG. 29.—(Author). Omentum rolled along transverse colon. 7, Cecum, and 6, Appendix, free from omentum; 1, Stomach; 2, Liver; 3, Gastro colic omentum; 4, Transverse colon; 5, Omentum colicum.

First, the diaphragmatic; second, the enteronic areas. This is the case because the diaphragmatic area and the enteronic area contain numerous stomata, and hence, numerous lymph vessels. The pelvic area contains relatively few stomata, and hence, practically is a peritonitic area and not an absorptive area.

In peritoneal operations the foot of the bed should not be

elevated, as it would direct the usual peritoneal fluid current more vigorously toward the diaphragm and abet diaphragmatic absorption of sepsis. The distal end of the peritoneum is a peritonitic area and not an absorptive area, and hence, its stomata are limited. It is the middle dorsal (enteronic) and dia-

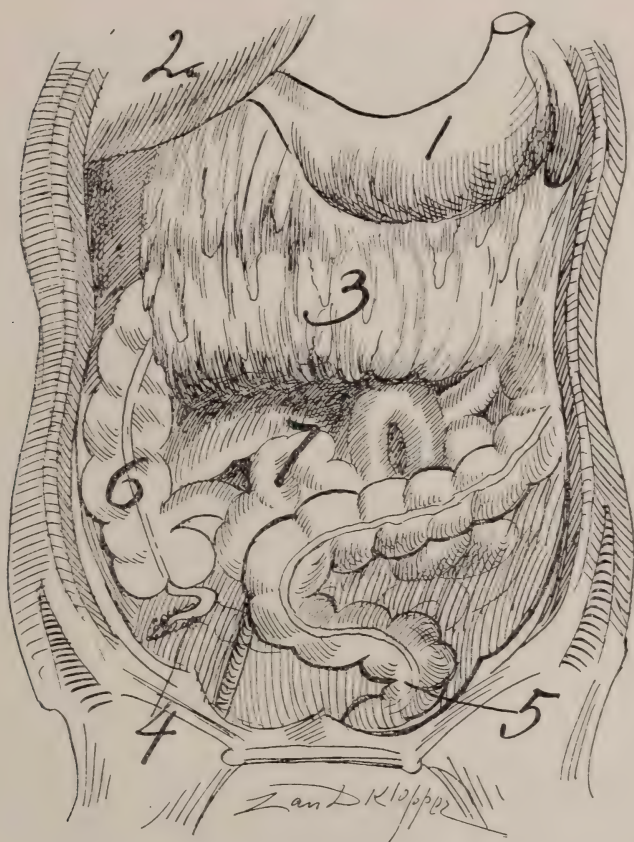


FIG. 30 —(Author). Omentum rolled along distal side of transverse colon. 1, Stomach; 2, Liver; 3, Omentum over transverse colon; 5, Sigmoid; 4, Appendix lying on the psoas with adhesions about it; 6, Cecum; 7, Coils of enteron with no omentum over them.

phragmatic area which is the dangerous area, hence, peritoneal irrigation is dangerous as it distributes germs into absorptive areas, as the enteronic and diaphragmatic. The omentum saves

scores of women by circumscribing the pelvic peritoneal invasion as well as numerous subjects from appendicular perforations.

Post Operative omental adhesions are always very numerous. This matter I have demonstrated in numerous cases both

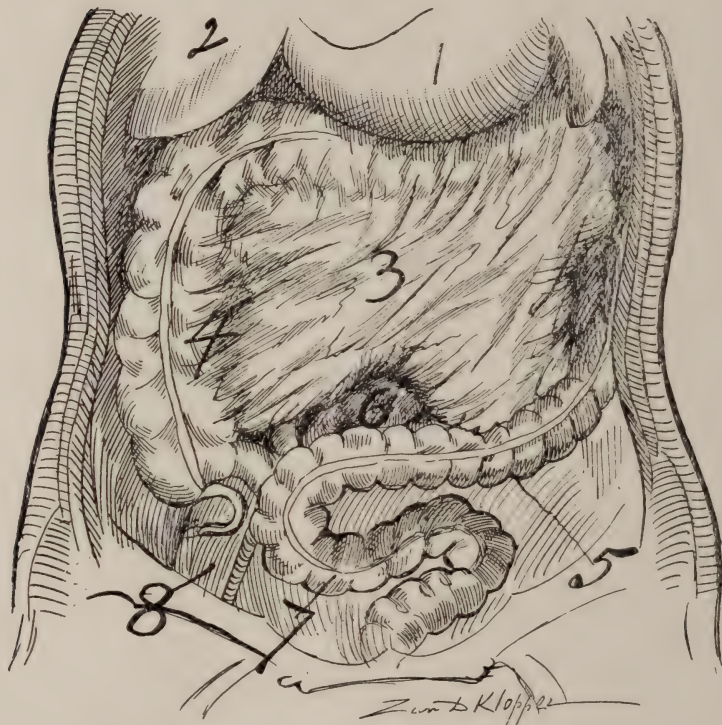


FIG 31.—(Author). Omentum rolled among the coils of enteron proximal to the sigmoid, leaving some enteronic coils in view. 4, Shows that the omentum (Haller's omentum) has passed to the point on the right colon where it is entered by the ilium. This subject has the omentum attached to the entire right colon. 3, Omentum; 6, Coils of enteron uncovered by omentum; 8, Appendix lying on the psoas uncovered by omentum.

in the dog autopsy and on the living and dead human subjects. I should judge that 75 per cent of subjects (dog and man) showed post operative omental adhesions either to the abdominal incision or to the point of operation procedure on the

viscera. Five years ago I advocated and practiced re-operation for abdominal pains following abdominal section. The abdominal pains following abdominal section are due to checking peristalsis and trauma on the visceral nerve periphery from peritoneal adhesions. Omental adhesions, likewise, cause ab-

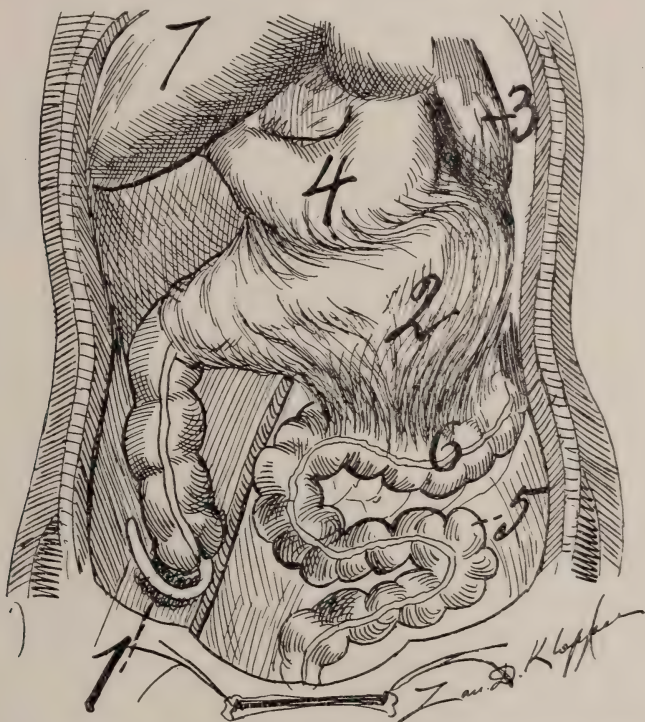


FIG. 32.—(Author). Shows the omentum has become fixed to the spleen, 3, and to the left colon and sigmoid, 6. 5, Sigmoid; 2, Omentum; 1, Appendix lying on the psoas surrounded by adhesions uncovered by omentum.

dominal pain in direct ratio to the fixation of the viscus. The omental fixation is generally the worst on the stomach as it checks its movements by its short pedicle. Second, it generally drags on the colon transversum and checks its peristalsis, but to a limited degree. Again, through the abdominal fascia in the middle line pass the mammary vessels. Now, some of these vessels are surrounded by a loose sheath of areolar tis-

sue, and hence, the aperture in the abdominal fascia is larger than is necessary for the vessels. In rare cases by trauma these apertures transmitting the vessels become enlarged so much that small pieces of omentum, tags or projections of the omental tissue either from the omentum itself, parietal or visceral peritoneum insinuate themselves through the fascial apertures along the side of the vessels and become fixed or herniated. This is supra-umbilical hernia and it imposes much suffering on the subject until relieved by operation.

Strangulation of the Viscera under omental bands is not a rare matter. The omentum becomes fixed in some septic locality of the abdomen. As time goes on the intestinal peristalsis breaks away most of the adhesions except the fixed distal point of the omentum whence the intestinal loops move to and fro under the band as an arch until some mechanical difficulty, such as gas or fecal collection, prevents the bowel loop from free movements whence internal strangulation arises. I have seen such conditions frequently in autopsy. In a female subject I saw the omentum fixed to the floor of the pelvis on each side, while in the center a large arch existed in the free distal border of the omentum, through which the loops of bowel could glide to and fro. In other cases I have seen bands of omentum fixed at the distal point and made like round cords by the friction of the viscera gliding to and fro under them. The most perfect round cords or bands of omentum are those in which the distal ends are fixed in the hernial orifices, and since the proximal portion of the omental band is not inflamed it has become rolled into a round cord by the peristalsis of the viscera—especially the highly moving enteron and dilatation and contraction of the stomach. There were numerous adhesions of the omentum to the intestines at points of local infection. In some the adherent points were only pin points in size.

The lateral abdominal wall has the omentum attached to it in about 5 per cent of cases. This is doubtless due to trauma of the abdominal muscles on the right or left colon, inducing microbic invasion of the mucosa muscularis and serosa, finally inducing plastic peritonitis. Occasionally the omentum is

fixed to the liver, the cause of which appears to be—*a*, infection passing from the pleura through the diaphragm to the proximal surface of the liver; *b*, the infection appears to es-

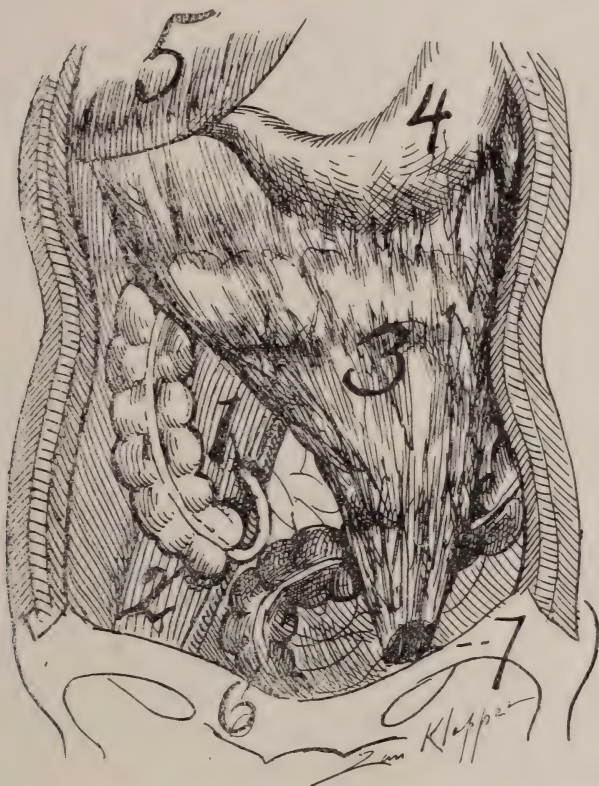


FIG. 33.—(Author). Shows the omentum in the left inguinal hernia. 3, Omentum; it becomes elongated and rolled up like a rope at the distal end which is in the inguinal canal. This form of omentum may allow loops of enteron or colon to glide to and fro under it and become strangulated. Observe that the cecum is on the psoas muscle and the appendix is on the same muscle and external iliac artery both present adhesions from trauma of the muscle and trauma of the artery on the appendix.

cape from the gall-bladder or a hepatic flexure of the colon. Several cases in a hundred will show hepatic omental adhesions. In some five cases in a hundred the omentum will be found

attached to the peritoneal adhesions which the trauma of the psoas produces on the segment of the bowel (cecum, appendix, or distal ilium) which lies within the longest range of muscular action (trauma).

The omentum may form attachments to any and every viscus within the abdomen, this was proven by my personal inspection of the abdomen in over five hundred autopsic cases, as well as hundreds of female laparotomies. It may become fixed to the liver, spleen, stomach, rectum, uterus, enteron, colon, oviduct, ovary, appendix, or even to the pancreas. It is especially liable to become attached to ligatured stumps of abdominal visceral wounds. With a superficial observation it would appear that the omentum was endowed with a kind of intelligence to move to the inflamed parts in order to aid them in their struggle against infectious invasion, but the whole law of this omental migration exists in degrees of motion and paresis, in wild, disordered peristalsis, and states of quietude of paresis, as well as the muscular action of the abdominal wall of the tractus intestinalis.

The attachments of the omentum may result in in protection and saving of life. These attachments may also result in serious damage—as strangulation of intestinal loops or painful dragging on stumps of the viscera. The various points of attachments shows that the omentum is constantly changing its position in the abdominal cavity.

RÉSUMÉ.

The omentum is the great protector against peritoneal infectious invasion; it builds barriers of exudates to check infection; it limits inflammatory and hemorrhagic extravasations. In wounds of the abdomen it acts as a plug to prevent escape of viscera. Its limits vary and it tends chiefly to the left side. It will save life by nourishing tumors twisted off their pedicles. It is like a man-of-war, ready at a moment's notice to invade the ports. It circumscribes abscesses, it repairs visceral wounds and prevents adhesions of mobile viscera to the anterior abdominal wall. It is like a moving police sentinel, whose beat is the whole peritoneal cavity—it is the policeman of the belly. It is the surgeon's friend, covering up the evils his

hands have wrought. It serves as the finest graft for peritoneal abrasions. It is a diagnostic aid, directing the surgeon to the original seat of peritoneal diseases where it first con-

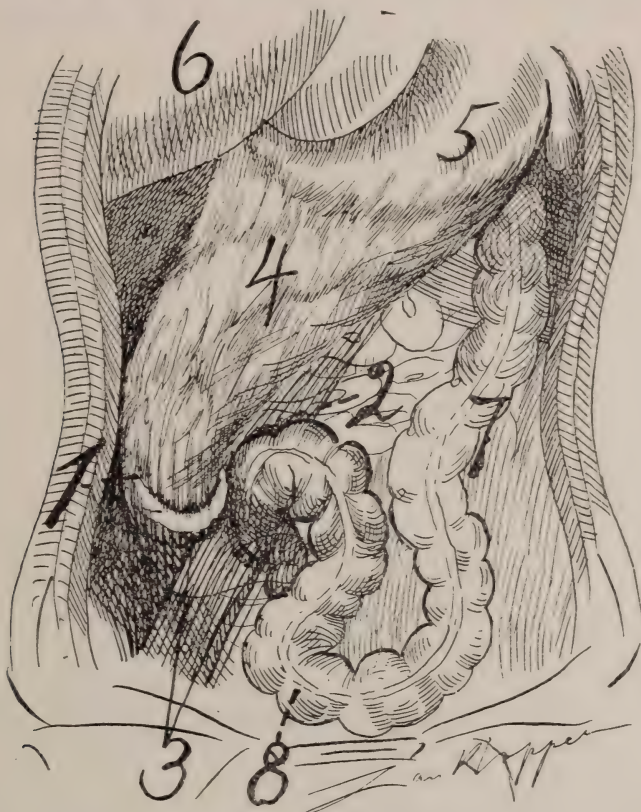


FIG. 34.—(Author). Shows the omentum majus fixed over the appendix, following some inflammatory processes (appendicitis). 4, Omentum; 2, The loops of enteron are mostly covered, they have made a free, smooth round edge on the omentum by contraction and dilatation, moving to and fro on its edge. The right loop of the sigmoid is caught in the adjacent appendicular inflammation.

tracted adhesions. It closes the intestinal visceral wounds. But, like a crippled soldier after the battle, the omentum can not resist again with its original vigor, as inflammatory adhesions have localized it. It appears in hernia twice as often as in intestinal loops.

The omentum is an area of peritonitis, not an area of infective absorption. It resists infectious invasions by typical peritoneal exudates, and not by succumbing to absorbed sepsis. Comparative anatomy teaches us that the omentum is not



FIG. 35.—(Author). Represents a patient's omentum majus fixed adjacent to a pyosalpinx, two months subsequent to parturition. 6, Uterus, subinvolved; 3, Omentum majus. The omentum, the policeman of the belly, corralled a large abscess at the pavilion of the left oviduct, and saved the patient's life.

for the purpose of keeping the intestines warm. It is one of the first localities for excessive accumulation of fat, and one of the first places to disappear in emaciation. It is a storehouse for fat. It is a director of the peritoneal fluids and the peritoneal drains. It is an arbiter of peritoneal tides. It is a degenerating and atrophying organ. It is composed of mesodermic mesentery and a peritoneal mesentery. It does not

differ in function or structure from other mesenteries. The apertures found in it are due to overstraining of the mesodermic mesentery. The omentum is a peritoneal pocket in the right

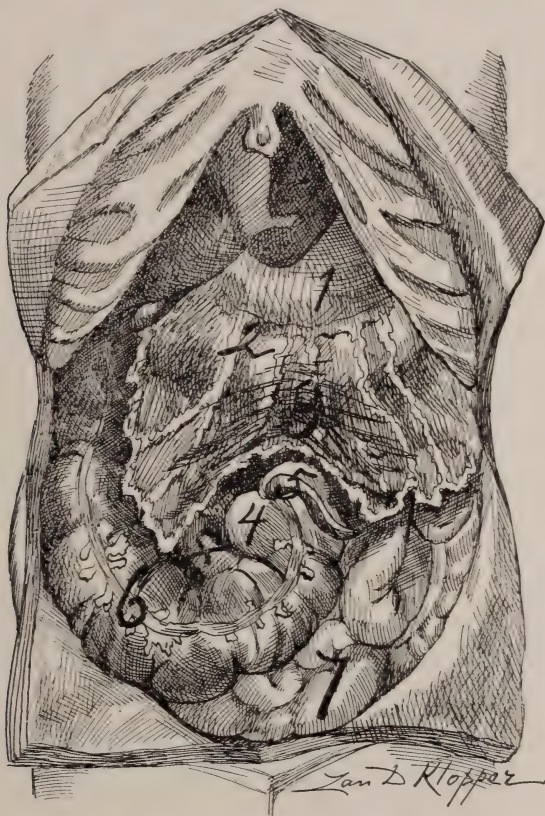


FIG. 36.—(Author). Illustrates a subject with the appendix (and cecum) in the potential position, *i. e.*, among the coils of the enteron, the dangerous area of peritonitis. By contraction and dilatation of the cecum the omentum has been thrown off the appendix. Unless the omentum be on hand when the appendicular rupture occur among the enteronic coils to corral the infection, death is almost always the result. 1, Stomach; 2, Omentum on transverse colon; 9, Omentum colicum; 5, Appendix; 4, Cecum—both uncovered by omentum; 7, Coils of enteron.

side of the mesogastrium. It may be used as a bridge to establish collateral circulation between the portal venous circu-

lation and the systemic venous circulation. It is an expanded periphery of the lymphatic system. It is an excellent material for intra-abdominal plastic surgery. It is a mesentery—the mesogastrium. It is present in all mammals. It arises from hypertrophy and atrophy of the liver and rotation of the stomach, and location of the spleen. Its numerous attachments shows that it wanders and shifts about in the abdomen. Its attachments to the inflamed areas is explained through the activity or quietude of segments of the tractus intestinalis and muscular action of the abdominal wall.

DISEASES OF THE OMENTUM.

The omentum is subject to neoplasm—as lipoma, fibroma malignancy, dermoid tumors and cystic developments. Primary and secondary tumors of the omentum must be differentiated. I once removed a dermoid the size of an orange from the omentum but it was no doubt originally from the ovary, being rotated off its axis and was being nursed by the omentum only. Practically all dermoids of the omentum are derived secondarily from the ovary.

Lipoma of the omentum arise and are generally considered malignant until the microscope reveals the facts. In the observation of many hundred autopsies and abdominal sections I never saw an omental lipoma requiring surgical interference.

Malignant Diseases of the omentum, as carcinoma, arise, but in rare cases. I have seen, perhaps, two cases, and a few reports in the literature.

Cysts of the omentum are not a rare matter. The cysts of the omentum are—*a*, inflammatory in origin; *b*, suppurating; *c*, hydatid.

Lawson Tait, Alban Doran and Spencer Wells report cysts as degeneration of the omentum. Thornton reports a hydatid cyst of the omentum.

Fibroma of the omentum has been reported.

Gangrene of the omentum may arise if it becomes strangulated through an aperture or under a band.

Hemorrhage of the omentum may occur from trauma and could prove fatal, but probably the hemorrhage would cease

long before a fatal issue. I operated on over two hundred dogs and in many of them I experimented in numerous ways with the omentum. I found that by tearing off pieces of the

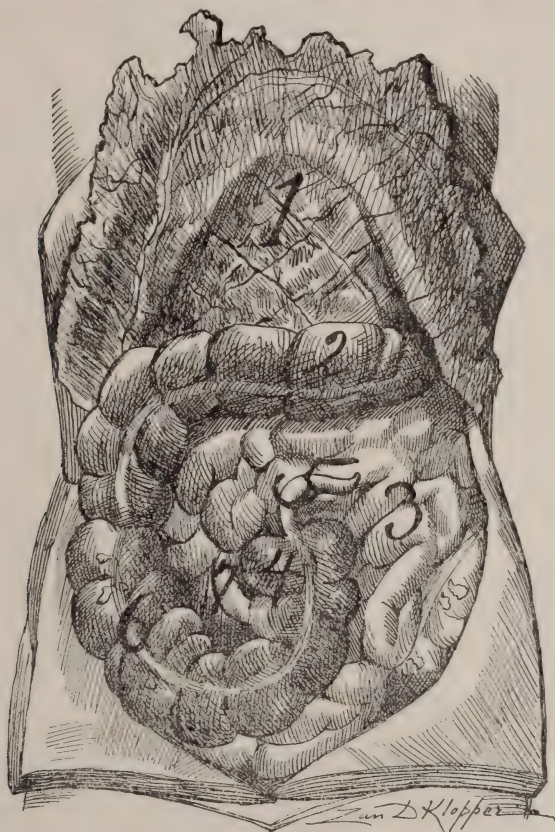


FIG. 37.—(Author). Illustrates a subject with the omentum reflected proximalward over the chest. The cecum and appendix both occupy the potential position, *i. e.*, among the coils of the enteron—dangerous area of peritonitis (the colonic area is the benign area of peritonitis). 1, Reflected omentum; 2, Colon transversum; 3, Coils of enteron; 4, Cecum; 5, Appendix; 6, Right colon; 7, Coils of enteron between cecum and right colon.

omentum no ligature or clasp was required. Sometimes, in localities where the vessels were large, tearing (trauma) of the omentum was followed by a fair-sized, but not dangerous, hematoma.

All omental apertures should be closed as the loops of enteron may insinuate themselves in the aperture and, by peristalsis, pass through. I tested this matter by taking two dogs and tearing from each dog's omentum a fold or circular patch for a graft, of two by three inches, and left the omental aperture open, unsutured. I killed the dogs some weeks later and found several large loops of enteron had passed through the omental aperture of each dog. Such loops might strangulate during disturbed fecal or gaseous circulation in the tractus intestinalis.

During the inspection of the abdominal cavity in over five hundred autopsies, I observed tubercular deposits in from 6 to 10 per cent. This was, however, only a part of a general tubercular peritonitis. In some cases of tubercular peritonitis the omentum is rolled into adherent nodular mass which may be palpable through the abdominal wall.

Omental bands are among the common causes of intra-abdominal strangulation of the tractus intestinalis. In some rare cases one may observe on the omentum fluid-like grapes which are doubtless of inflammatory origin.

Two excellent articles on the omentum should be here noted: F. W. Ross, *American Journal of Obstetrics and Diseases of Women*, 1893, and J. C. Adami, *Philadelphia Medical Journal*, 1898.

For the privilege of inspecting the abdominal cavity of some of the subjects I am indebted to the courtesy of Prof. L. Hektoen, Pathologist to Cook County, as well as to his assistants, Dr. E. R. LeCount and Dr. Crowder, and also to Dr. Edwards.

The American Proctologic Society will hold its Third Annual meeting at Hotel Aberdeen, St. Paul, Minn., on June 4 and 5, 1901. An interesting program has been prepared and an enjoyable meeting is anticipated. The officers of the Society are: Dr. James P. Tuttle, New York, President; Dr. Thomas C. Martin, Cleveland, Vice-President; Dr. Wm. M. Beach, Pittsburg, Secretary and Treasurer.

Our Daily Bread.

By GEORGE HOMAN, M.D.,

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, February 7, 1901.

A COMPREHENSIVE definition of bread is worded as follows: An article of food made of the flour or meal of grain, mixed with water or milk and salt, to which yeast, baking powder, or the like is commonly added to produce fermentation and rising, lightness, or sponginess, the mixture being kneaded and baked in loaves or as biscuits, rolls, etc.¹

It is stated that the most primitive way of bread making was to soak the grain in water, press it and then subject it to heat. This was improved upon by pounding or braying the grain in a mortar or between two stones before wetting and heating, and some etymologists would derive the word bread from this braying operation.

The development and refinement of this process may be said to constitute one of the chief marks of advancing civilization, and in no particular has the cooking of food received more attention than in the preparation of bread. The need of this form of aliment is so pronounced in people who have emerged from the savage state that the name has stood since the earliest records as a synonym for food in general, the adherents of the Christian religion, for example, being enjoined to pray that they may be given day by day their daily bread; and as such it typifies the fundamentals of animal life meeting some of the primary physiological demands of the body although not in itself a complete food.

In all the more advanced nations the flour of wheat is used in the making of bread, and the proper milling of the grain is necessary for the two-fold purpose of reducing it to a powder and of excluding the coarser and indigestible parts.

While the richness in quality of the grain in the world's wheat-growing regions increases toward the equator still after

the evaporation of the contained water the mean composition of an average quality of wheat may be stated in percentages as follows:

Gluten and albumen.....	13.5
Starch.....	54.5
Gum, sugar, oil and fiber.....	30.
Saline matters.....	2.

Taking the weight of one hundred kernels of wheat as 3.87 grams the Chief of the Division of Chemistry, Department of Agriculture, has recently stated the constituents of that quantity of grain in the following form:

	PER CENT.
Moisture.....	10.62
Proteids.....	12.23
Ether extract.....	1.77
Crude fiber.....	2.36
Ash.....	1.82
Starch and sugars.....	71.20

As mentioned in the definition of bread given above the three absolute requisites for the making of good bread are (1) flour or meal, (2) yeast or leaven, and (3) water containing salt—the first furnishes the important food constituents, proteids, starches and ash; the second by gaseous evolution distending or raising the dough and thus enabling the applied heat to act more efficiently; while the water and salt are necessary to form the dough mass and impart savor to the finished product.

The mere assembling and mixing of these materials even though of the best quality does not assure a wholesome article of bread for besides the requisite skill for preparing the dough its proper baking is an equally important factor, and is, perhaps, the least well understood of the two.

The means or agents employed to leaven the dough are of prime importance and their relation to the desired end should be clearly comprehended.

Yeast or leaven is a ferment known from earliest times and is added to give a start to the fermentative process through the action of its enzymes on the gluten, starch and sugar of

the flour thereby supplying carbon dioxide which imparts a spongy texture to the bread.

Yeast consists of microscopic vegetable organisms, which, when placed in a suitable medium, grow rapidly, producing alcohol and carbonic acid gas. The evolved gas, in attempting to rise, becomes entangled in the meshes of the dough, distending it and making it light. After the dough has risen sufficiently, it is placed in a hot oven to bake. The heat destroys the yeast plant, and thus prevents further fermentation. If the growth of the yeast be allowed to continue for too long a time, acetic, lactic, and butyric acids are formed, and such dough makes "sour bread."²

The minimum temperature of an oven for bread baking is placed at 320°F., and the maximum may reach 570°F. The action of the heat dissipates much of the water from the dough, distends the air spaces more fully, steams or boils the starch and gluten in the dough, develops some gum from the starch, and when yeast has been used, as before mentioned, destroys the yeast plant.

However high the temperature of the oven may rise that of the interior of the loaf can not be much if any above 212°F., so that essentially the cooking of all but the crust of the loaf is the effect of the action of moist rather than dry heat, and the baking process must be continued for such length of time as may be required to accomplish the transformation of the raw starch, etc., into a form fully acceptable to the human digestive functions, and this implies a period depending, of course, upon the size of the loaf and the temperature of the oven,—the formation of dextrine being a very important part of the process.

The following is a correct description of the general qualities of good bread: Good bread has a thick, fragile crust, which is not burnt, and which forms from twenty to thirty per cent of the weight of the loaf. The crumb is white and filled with cavities, the partitions between which are easily broken down. These cavities should be distributed through every part of the crumb; otherwise the bread is sodden and heavy, and decomposes quickly. The bread should be of a pleasant odor and taste.³

Besides the use of yeast for raising bread other substances are employed which by chemical action set free carbon dioxide and thus distend the mass; and their convenience of use and rapidity of action have contributed largely to replace yeast for this purpose in domestic use at the present time in the preparation of the more quickly extemporized forms of bread.

The employment of saleratus with buttermilk, or other acidulous milk, was the forerunner of the baking powder which now plays such an important part in the commercial world, as well as in the economy of the domestic menage. They were first used in this country, perhaps, forty years ago, and the practical development of the idea involved in their preparation was due to American enterprise. While there are several different substances and combinations used by baking powder manufacturers the object sought is identical, that is by the reaction of bicarbonate of soda and an acid salt mixture in the flour to generate carbonic acid gas by the addition of water and thus quickly inflate the mass, this process being aided by the heat of the oven.

Domestic experience has gradually developed the buttermilk-saleratus combination for raising biscuits, rolls, etc., but the difficulty always confronting the cook was to correctly proportion the two ingredients as the weak lactic acid of the milk did not always neutralize the amount of alkali presented, and the result was a product with an interior of a saffron hue mottled with dark spots and of a more or less soapy, alkaline or bitter taste.

Curiously enough the confirmed digestive derangements often attending the eating of such forms of bread were attributed to the fact that they were consumed while hot, and even to this day some physicians may be found who inveigh against the use of hot rolls or bread, as if the mere temperature was the cause of offending rather than the faulty making or imperfect baking—these inducing in the partaker, fermentation, flatulence, gastric distress and other unpleasant symptoms. A compacted bolus of such bread when swallowed presents to the digestive power of the stomach a serious task as it can be acted on but slowly and disintegrated with difficulty thus giv-

ing rise to pyrosis, eructations, and other manifestations of laborious and imperfect digestion, and if the baking alone be at fault this holds true of bread made with any kind of leavening whatever.

It was with this object of furnishing an agent that could be kept on hand ready for immediate domestic use that the baking powder industry came into existence, and that a popular want has been met would appear to be proved by the magnitude of this branch of trade at the present time. Therefore it becomes necessary to consider the influence of these products in the preparation of an article of food so important as bread, and to inquire into their possible or actual ill effects on the health of those who use bread into the making of which this form of leavening enters.

As already indicated the only object sought in using leavening agents is the inflation of the dough-mass; and this end is attained with (1) yeast as the result of a vital process; (2) with certain substances as a result of their mutual chemical action; and (3) it may be reached by mixing the flour with water charged with carbonic acid gas, or by inflation of the dough by some simple mechanical agent, as a pair of bellows for example,—the means to be adopted in the average kitchen depending on facility of use, relative expensiveness, efficiency of action and satisfactoriness of result in appearance, palatability, wholesomeness, etc. In ordinary domestic menage baking powders appear to offer these advantages in a superior degree, and therefore the substances which enter into their composition and the method of their manufacture claim public as well as professional attention in view of the vast development of the business within the last twenty years.

There are three principal combinations of chemical substances used in the manufacture of baking powders, these being known to the trade as straight alum powders, phosphate alum powders, and cream of tartar powders, and the average composition of these several products may be stated with approximate accuracy, omitting fractions, as follows:

STRAIGHT ALUM POWDERS.

	PER CENT.
Soda-alum.....	20
Soda bicarbonate.....	20
Corn starch.....	60

PHOSPHATE ALUM POWDERS.

Calcium phosphate.....	18
Soda-alum.....	18
Soda bicarbonate.....	26
Magnesia carbonate.....	1
Corn starch.....	36

CREAM OF TARTAR POWDERS.

Cream of tartar.....	55
Soda bicarbonate.....	25
Corn starch.....	20

It may be explained here that in all of these formulas the starch is added simply for the purpose of separating the active ingredients thus insuring the good keeping quality of the powders and favoring their more equable reaction when used. In trade language it is termed a "filler."

In the last two formulas a small percentage of albumen is added to increase the glutinous quality of the dough, and thus favor the action of the liberated gas.

It being borne in mind that the sole purpose of these several combinations is the lightening of dough by means of the freshly evolved carbon dioxide, and as it is not charged that this gas is injurious to health when employed in the preparation of food, it remains to be seen whether there are any by-products or secondary combinations against which such a charge may fairly be lodged.

In the first two formulas alum holds a leading place, the variety stated to be preferred and used for this purpose being soda-alum, as distinguished from the other kinds known as ammonia-alum and potassa alum. The alum used in these two combinations is alumen exsiccatum or alum from which the water or crystallization has been driven by heat, thus losing nearly half of its weight and appearing as an opaque white powder somewhat resistant to the action of cold water.

The obvious aim of the manufacturer in order to secure a satisfactory product must be to so proportion the amount of alum and bicarbonate of soda that they will both disappear as the result of the reaction which takes place when used in bread-baking, for upon success in this respect must depend to a very considerable extent his ability to please his customers, in short to do a successful business.

The combining proportions of soda-alum and pure soda bicarbonate are as 48 to 50, and no residue will be left, but as found commercially these substances usually contain some impurities and this fact must always be taken into consideration.

Soda-alum being a double sulphate of sodium and aluminum the evident secondary combinations possible in the case of the first and second formulas, failing a correct proportioning of the constituents, would be sulphate of soda (Glauber salts) and aluminum hydroxide, the acid element for the production of carbon dioxide being furnished by the aluminum sulphate. But in the case of the third formula the reaction of the acid and alkali constituents would secondarily produce sodium potassium tartrate (Rochelle salts), and in both instances if these combinations were present in any quantity in the bread the well known bitter taste of these two familiar salts would give sufficient warning to the consumer, and as a matter of fact such flavoring was not uncommonly met with in biscuits and rolls made with the saleratus-buttermilk combination; indeed, it is sometimes encountered now in forms of bread made with any kind of baking powder. While such a taste is, of course, foreign to good bread and must be pronounced most objectionable, still the substances responsible for it could hardly be considered harmful as at most they would be unlikely to have more than a slight aperient effect on those consuming such bread.

The combination known as aluminum hydroxide or hydrate or ter-hydrate, possible when alum baking powders are used, is described as a light, amorphous powder, devoid of odor or taste, insoluble in water or in alcohol, but soluble in solutions of the acids and the alkalies. It is a mild astringent and dessicant, and, when freshly precipitated, clarifies the

liquid in which it is contained by withdrawing from it dissolved matter both organic and inorganic.⁴

Litigation, in the course of which the chemistry of baking powders was exhaustively gone into by scientific experts with special reference to the question of the effects of alum on the human system, was begun in St. Louis late in 1899 as an outcome of legislation enacted by the General Assembly of Missouri the same year which prohibited "any person or corporation doing business in this State to manufacture, sell or offer to sell, any article, compound or preparation for the purpose of being used or which is intended to be used in the preparation of food, in which article, compound or preparation, there is any arsenic, calomel, bismuth, ammonia or alum,"—the minimum penalty being fixed at one hundred dollars.

While the influences that procured this legislation were not publicly evident at the time of its enactment the interests controlling and owning the cream of tartar baking powders business appeared conspicuously in the prosecution of the first case instituted under the law, and they spared no pains or expense in order to secure a conviction, the reputed inroads on their business by their competitors presumably prompting this course as the market price of the alum powders is about one-third that of the cream of tartar powders.

The style of the case was State of Missouri, plaintiff, *vs.* Whitney Layton, defendant, and the fact that the defendant was engaged in the manufacture and sale of alum baking powders was not denied, the defense resting on the asserted unconstitutionality of the law and the harmlessness of alum baking powders. In the course of the trial a great amount of expert and *ex parte* testimony was heard—chemical, medical, physiological, etc.—many of the most eminent chemists in this country being present, the efforts of the prosecution being vigorously exerted to show either that free alum was present in the bread or that harmful aluminum compounds were formed when alum baking powder was used, the substance called aluminum hydroxide being especially pointed out as of that character.

Without undertaking to review the great body of testimony offered and bearing on these points it will be sufficient

to quote from the decision of the trial court in giving judgment in the case. After commenting on the contention of the prosecution that hydroxide of aluminum was deleterious and the testimony offered by eminent experts as to its theoretical effects, attention was called to the fact that but one witness presented any report of experiments (which were performed upon himself) and these showed that a single dose of not less than twenty grains were required to produce any appreciable effect. The testimony of all other experts who testified for the prosecution rested purely on a theoretical basis, and though it appeared that hydroxide of aluminum was a substance easily accessible and which could have been made the subject of practical experiments by the various eminent scientists yet they were without a single practical test except the one mentioned, and were without a basis of actual determination upon which to found their theory. The Court continues:

“Upon cross-examination the experts testifying for the prosecution admitted that in all their reading and information they possessed on the subject they had never themselves come in contact with, nor could they obtain any information or any knowledge of any recorded instances in which functional disorders or disease or impairment of the digestion and general health had resulted to any human being from the use of alum baking powders as an ingredient in the preparation of food. In the mind of the Court this fact, considering the enormous proportions to which the alum baking powder industry has grown in this country, and the length of time in which such baking powders have been used stands as a stone wall against the deductions of the most eminent scientists who presented their theories on the part of the prosecution. I am unable to find in the evidence presented in this case any just ground for a ruling that alum baking powders, of themselves, when used in the preparation of food are in any way less wholesome than any other variety of baking powders.”

There can be no doubt of the fact that a strong public prejudice exists against the use of alum in bread-making, but this prejudice originated in times when bread stuffs were much dearer than now, and when alum was deliberately employed for the whitening the loaf, thereby enabling an inferior flour to be used, as well as to increase its weight in containing moist-

ure, thus perpetrating a double commercial fraud which very properly was the object of restrictive legislation. A dietary cheat also attended this misuse inasmuch as the phosphates of the flour were rendered less soluble, if not insoluble in the stomach.

The fundamental distinction between this fraudulent use of alum, and the purpose of its presence in baking powders to-day will be obvious from what has already been said; but that the justly grounded prejudice arising in other days has been shrewdly taken advantage of by the cream of tartar baking powders people to discredit the product of their business rivals can not be doubted, and in the legislation obtained in furtherance of their ends no small degree of craftiness was displayed in putting arsenic as the leader and alum as the wheeler in the tandem driving of alleged statutory poisons.

Ancient history tells that a certain king was wroth against two of his officers, the chief of the butlers and the chief of the bakers, and threw them both into prison where they lay for three days, after which the king restored the butler to his honors, but he hanged the chief baker. The counts in the indictment against this offender are not given in the narrative, and while commentators may differ it must be evident to medical men who may read between the lines that incompetency or negligence in his work must have been the crime which outraged the stomach and roused the dyspeptic wrath of his master; and it is not too late even now to pay a deserved tribute to the wroth of one who was no mean nor inconsiderable ruler for his action clearly showed that he possessed the quality of penetrative sagacity to discover the cause of the mischief, and the courage to fit the penalty to the crime. Should we ever happen upon the mummy of this Pharaoh let us not withhold a tear to his memory and indulge the hope that emulators of the example set by this kingly soul may arise even in these degenerate days. For who of us when confronted at table with sour, leathery, sodden or tasteless travesties on bread has not hanged the baker—in his mind—but we have not dared to go any further than that.

As already pointed out even if all the elements of bread be of the best quality and the mixing also be without fault

still if the baking be not equally perfect as to stage or leavening and time of exposure failure must ensue. Doubtless much of the gastric distress and fermentation with acid eructations, heartburn, etc., in persons of weak digestion may be traced to the eating of breads not baked sufficiently to kill the *saccharomyces* where yeast leaven has been used; and a long train of evils may with equal truth be ascribed to the unchanged starches consumed in forms of breads where heat at a proper temperature has not been permitted to have its full ripening effect upon the loaf.

The custom, perhaps, in the average kitchen is to hurry the pans into the oven and whisk them out almost as soon as some singeing or scorching is apparent, the usual fault being a too high temperature with insufficient time of exposure for penetration of the heat throughout the interior, which is absolutely necessary to secure transformation of the starch with the formation of dextrine on which the savor and aroma of bread depends and which adds so greatly to its palatability and digestibility. In fact, true panification is impossible otherwise.

It is, therefore, incumbent upon those who denounce alum baking powders as being hurtful to point out clinically recognizable disease caused by such powders and at the same time to be careful not to confound therewith forms of gastric ailments which existed long before such powders were known.

A recent writer⁵ has directed attention to several points in connection with bread and bread-making that are of interest and importance. As to the extent of this business he says that during the twelve months ending June 30, 1892, 268,868,281 bushels of wheat were used in the United States for bread-making, this amount equalling 16,132,096,860 pounds. The waste in milling wheat (bran, etc.) is replaced in bread by water so that practically a pound of bread equals a pound of wheat. The actual cost of this bread, placed upon the table, not to speak of the profits of the baker, is about three cents a pound; making the total value of the bread consumed in the period of twelve months in the United States \$483,962,905.80.

Now this vast sum of money ought to command a better article of bread than that commonly offered to consumers and

Prof. Wiley calls attention to the Schweitzer system, as he observed it operation in France. By this system flour is used from freshly ground wheat milled in a way to cause it to be more than doubly rich in phosphates and nuclein which are largely destroyed in the roller process of grinding, and the fact of this vital difference between the two flours has been demonstrated by means of actinographs.

Flour is subject to oxidization by exposure to air and thus suffers impairment in its nutritive value this being evidenced in part by the loss of its golden tint which is one of the marks or a good article of flour.

The nitrogenous principles of wheat are composed chiefly of glutenin and gliadin which with water form the gluten or tenacious element of dough. In the Schweitzer flour, which is of a marked golden tint and granular, these principles are preserved and the bread which is also yellowish in color is so palatable, nutritious and so aromatic that no other kind is desired. The writer above-mentioned says:

"In view of the enormous economic importance of the bread industry, it is not unreasonable to desire to see the quality of our bread improved. It is not at all an exaggeration to say that scarcely 25 per cent of the enormous quantity of bread mentioned above is properly prepared or properly baked. The nutritive properties of the other 75 per cent are diminished, its palatability decreased, and its value lessened by improper panification—not to speak of the dyspepsia and other digestive disorders attending the use of poor bread. In the interest of health, economy, and good living a reform in our bread-making process is urgently demanded."

He add that the domestic baking of bread is to be deplored, that bread badly made has not a leg on which to stand, and that an earnest effort should be made to relegate domestic bread-making to the past, and to substitute in every community bakeries under competent control offering the best bread at the lowest prices.

From what has gone before it may be not unfair to conclude that bread-mixing and bread-baking have not in this country, as yet, been generally perfected; that much of the nutritive value of flour is dissipated and lost in bread as ordinarily presented; that while the leavening of bread is an im-

portant part of its wholesome production the particular agent to be selected for this purpose—whether of vital, chemical or mechanical nature—must be largely discretionary with the baker; that serious dyspeptic consequences may attend the use of yeast raised bread, as well as that made with any other kind of leavening; that the efficiency of baking powders as respects the purpose for which they are intended is unquestioned, while it has not been shown by medical experience or expert testimony that more harmful results follow from the use of the alum powders than from other forms of baking powders; that a great conservation of economic and nutritive value seems possible from a better understanding of the art of milling grain, the care and treatment of flour thus produced, and the proper preparation and baking of bread from such flours as evidenced by foreign experiment and extended experience.

LITERATURE.

¹Standard Dictionary.

²Vaughan —Lomb Prize Essays, Am: Public Health Association.

³Healthy Foods, Am Public Health Association.

⁴Encyclopedic Medical Dictionary.

⁵H. W. Wiley.—"Forum," November, 1900.

NOTE.—The following description of the Schweitzer method of milling wheat and the production of bread is taken from a consular report to the United States Government, published January 29, 1900. This report says that the flour is ground out in quantities sufficient to meet the daily needs of the bakery, and that the wheat when received is carried by an elevator to the top of the mill and turned into the different cleaning and separating machines. The report continues:

"After all the foreign substances have been removed and the grains of wheat have undergone a thorough brushing and washing, they are clean and shiny; but the grooves of the wheat sometimes retain a little dust. This is completely eliminated by a Schweitzer appliance, which, seizing each grain lengthwise, splits it exactly in the groove.

"The wheat thus cleaned passes into the mill, composed of flat, circular steel grinders, grooved in such a manner that they accomplish the decortication of the kernel and its granulation into meal at the same time. These grinders are movable, but do not touch; so that, instead of crushing the wheat and producing a flour in which the

starch oil is retained, the outer and harder portion of the wheat, containing gluten and other nutritive properties, is retained in the flour. The bran alone is expelled.

"Attached to the mill are the works for kneading the meal, water and yeast into bread. All this is done mechanically, the works being separated into three stories. Special yeast is prepared in the upper story in rooms heated in summer and cooled in summer. The yeast, flour, and the salted and filtered water are carried down by machinery into kneaders in the form of half cylindrical tubes, rotating on two pivots placed in the axis of the kneading troughs, so that the tubes may be placed at a lower or higher angle in order to accelerate or retard the kneading.

"One person can attend to two Schweitzer kneaders, regulating the distribution of the dough, and thus the kneading of 2000 kilograms (4409 pounds) of dough per hour is accomplished.

"The steel arms of the mixing and kneading machinery, some of which are stationary and others mobile, stretch and work the dough much better than hand power.

"The flour, salted water and yeast automatically enter one end of the tube, and dough in an endless skein of pale yellow issues from the opposite end. This dough finally falls on tables on the ground floor, where it is weighed and made into bread of every shape and dimension. Small wagons are charged with the shapes, which then go to the raising room. Each floor has a fermenting room kept at an even temperature.

"The dough, after raising, is carried by wagons into the baking room, where it is placed in Schweitzer ovens heated by gas from retorts arranged in such a manner that the gas does not enter the oven, and the heat is so regulated that the baking operation goes on automatically.

"In connection with this model establishment is a laboratory for the chemical examination of the samples of wheat submitted for purchase. These are, upon their arrival, ground and passed through a sieve by a small hand-bolting mill, * * * which determines immediately the nutritive volume of the grain in gluten and nitrogenous matter."

This report also states that there are mills, ovens, and kneaders of various dimensions that may be worked by machinery or hand-power. The latter system enables the farmer to grind his own wheat and make his bread from an unadulterated and wholesome product, and mentions that family bread produced by this system is retailed in France at the rate of about two cents per pound, which is really one cent less than the usual price.

EDITORIAL.

THE STATE ORGANIZATION, THE GUARDIAN OF THE INTERESTS OF THE PROFESSION.

In the rank and file of the medical profession in the United States throughout its entire extent, there exists a feeling of unrest, of dissatisfaction with present conditions and with the trend of circumstances which are out of harmony with its best interests.

With careless indifference the profession has lethargically pursued the even tenor of its way, each busy with his own selfish interests, and has refused to give more than a passing thought to the rapid growth of agencies, harmful alike to the public and to the medical profession, until they have become so formidable that they can no longer be ignored, and the profession is awakening to an uncomfortable realization of their strength and power.

The competition in an overcrowded profession from the rapid increase in the number of legitimate practitioners is a serious matter and when to that is added that of the osteopath, christian scientist, magnetic healer and others of like kidney, the condition becomes almost intolerable and the profession is forced to conclude that something must be done. Since each state of the union regulates the practice of the healing art within its confines, relief, as far as it can be given by the state, must be looked for from the legislative bodies of the various commonwealths.

The past winter has been notable for the number of medical practice bills introduced into the legislatures of various states from the Atlantic seaboard to the Pacific and from Minnesota to Texas, showing an almost simultaneous awakening of the profession to a realization of conditions universally prevalent. Such efforts have not attained the degree of success that they merited.

Those whose interests clash with that of the medical profession

are no mean adversaries. They command financial and political influence which are used to their fullest extent, and also that most powerful of all, the influence of the public press—in sorrow let it be said. The profession must fight its battles alone, and against such influences must gird well its loins for the contest, for the die is cast and throughout our entire land it has become a question of the domination of the profession or of its enemies.

The profession must look to its state organization for the devising of means and the execution of plans for the purpose of securing relief from illtoward conditions. But the inertia of the profession in regard to matters of self-interest has been one of its fatal shortcomings. It appears to be unconscious of its latent power and of its possibilities. The profession is numerically strong enough to demand a consideration of its wants instead of having to beg for such a favor as is now too often the case. A strong compact organization with unity of purpose will not have to ask in vain.

In order to accomplish results the profession must organize its members into an active aggressive body which will take an active part in the affairs of the body politic when such may be necessary to protect its own interests. At all times the public must be made to recognize its dominant force and accord to it a recognition worthy of its position, instead of the scant courtesy with which it is now treated on all occasions of public honor. Closer union is the "war-cry" of the profession throughout the United States. A more thorough organization has become necessary to its existence.

In the State of Missouri the profession should at the coming State meeting appoint a committee to organize medical societies in every county where they do not at present exist, and the Constitution of the State organization should be so changed as to provide for the federation of the county societies with the State Association. A means of intercommunication might be established with benefit. The time and place of holding the State meeting should be so arranged as to be productive of the greatest influence. A tireless, energetic worker, a thorough organizer, a forceful and resourceful leader should be chosen for the head of the State organization. He should be selected for his ability to bring things to pass and should be retained in office as long

as the best interests demands it. These are matters which must be taken up for consideration and action, and at the present time, are of more importance to the profession than the consideration of strictly scientific topics.

In the struggle for existence the profession must put itself in the best possible condition to guard its interests against influences that are antagonistic to it and which are daily increasing instead of diminishing in strength. To do this it must develop and use its power in no uncertain manner, if needs be it must silently dominate the affairs of government to such an extent that its approval will become to the office seeker a *sine qua non* to his success.

THE INFLUENCE OF RACE UPON THE DURATION OF LIFE.

It is a trite saying that comparisons are odious, but it is only the measure of differences in comparisons, that many a deductive truth is proven, and in the uninteresting reading of statistics is often found a gem of truth that well repays the labor of the research.

It is one of the natural traits of the human being to give his thoughts only to the present and to dwell lightly, or not at all, on the morrow and the probable end of his earthly existence, an event in the impenetrable future, which hope ever keeps in the distance concealed by the veil of uncertainty.

Life insurance companies, however, with a cold blooded indifference to the sentiments that smooth life's pathway and leads to a hope of euthanasia at the end, have estimated the probable duration of life both for the Greek and for the barbarian. The life expectancy of all the leading races of the earth have been estimated and reduced to a monetary valuation, even the Hottentots on the burning sands of Africa have not escaped the calculating tendency of the insurance actuary.

The racial characteristics and habits, and their beneficent or pernicious influence upon the tenure of life, have been impartially but

critically estimated at their true value. Much of this is of extreme interest to physicians outside of its importance in life insurance. In a brief sketch of the national characteristics of the various races, Theodore Williams, of London, points out (*Medical Examiner and Practitioner*) the physical defects and the harmful influences of their racial habits.

A comparison of the different tables given, show that the American people are the healthiest of all and have the lowest mortality rate, notwithstanding the characteristic activity with which they pursue their different vocations, and their habit of indulging in weak tea and iced water at meal time, with cock-tails and candy in the interim.

The Englishman follows the American in point of healthfulness. More accustomed than other European races to a better quality of food, of which beef forms a large proportion, and indulging in alcoholic stimulants less than his Continental brethren he is endowed with a better physical constitution than his immediate neighbors, and which is in no small measure due to his fondness for abundant outdoor exercise. The Germans come next. Their appreciation of the value of exercise is shown by their liking for the gymnasium and their lengthy tours as pedestrians or on bicycles, but the beneficial effects of these agencies are limited by their habit of excessive beer drinking and smoking, which renders them less resistant to disease.

The Frenchman is indifferent to the enjoyments of physical exercise and refrains from it as much as possible. The racial habits that place him below the German in the scale of healthfulness are his fondness for the pleasures of the table, his love of wine and a chronic condition of costiveness, from which all the race suffer.

The habits of the Italian are similar to those of the Frenchman. His wines are stronger, he is more given to the use of tobacco and is far less cleanly than his Gallic brother. With him exercise is an affliction that is scarcely less dreaded than the pestilential miasm of the Roman Campagna. His physical resisting power to disease is not of a marked quantity.

In the less-thickly populated countries of Norway, Sweden and Denmark, the death rate is less than that of the larger adjacent countries, and here it is probable that climatic conditions which are condu-

cive to a more active life are no inconsiderable factor in lessening the mortality rate.

Of all the European races the death-rate per thousand is greatest in Austria and Hungary, strange as it may seem, exceeding even that of Italy.

In contrast with the healthfulness of American people is that of the excessive mortality of the negro race in the United States and the fact that this has been on the increase since their emancipation. A report prepared for one of the largest insurance companies in America states that the lowest mortality rate of the negro is found in the city of New Orleans, while the highest is in that of Baltimore. The habits of the negro and the unhygienic conditions under which he dwells tends to further weaken his constitution which is far below that of the Anglo Saxon in physical ruggedness. In the inevitable survival of the fittest he will doubtless succumb to influence of his environments and in America will, in time, follow the footsteps of the Indian and the buffalo into extinction.

IMMUNIZATION AGAINST TYPHOID FEVER.

The brilliant successes of the antitoxins against diphtheria and tetanus have given encouragement to the belief that a like means would be found to immunize against or to cut short an attack of typhoid fever. Efforts have been made to produce a serum which, when injected into the body will confer an immunity against the disease and which will act as an antitoxin when injected during the course of the disease. The latest of these is that of Jez, who has obtained an antityphoid serum from an extract of the spleen, thymus, bone marrow, brain and spinal cord of animals which have been immunized against typhoid fever. Sufficient time has not elapsed in which to place a true valuation on the merits of his product or to substantiate the claims made for it.

Attempts have also been made to obtain a condition of immunity by inoculation or vaccination with the toxins and the sterile cultures of

the typhoid bacilli themselves. This method has been quite extensively tried by the British army surgeons in India and South Africa with the result of decreasing the percentage of cases and of lowering the death rate. The inoculative material consists of a pure broth culture containing the toxins and the bacilli themselves which have been killed by heat. In general characteristics this vaccine, according to McLauthin, closely resembles that used by Haffkine in his cholera inoculations and whose results in that disease has been the incentive for like attempts to inoculate against typhoid fever.

The constitutional symptoms following inoculation are not marked and usually pass away in twenty-four to forty-eight hours. At the site of the inoculation more or less irritation results, producing a slight inflammation of the cellular tissue and of the lymphatics, which likewise is of short duration.

The blood of patients who have been inoculated with the anti-typhoid vaccine have the same poisonous effect on the living typhoid bacillus as the blood taken from patients in an active stage of that disease, namely, that of immobilizing and of agglutinating them. The duration of the effects vaccination has against typhoid fever appears to be variable and the immunity conferred diminishes more or less rapidly, influenced by the degree of susceptibility to it and the individual characteristics of the patient. This immunity appears to cease after a period of from two to two and a half years and inoculation anew becomes necessary to continue the protection. Like the experiments of Jez, the attempts to confer an artificial immunity by inoculation have not as yet been of sufficient number to place a true estimate on its value as a protection against typhoid fever.

It appears reasonable to believe that a greater degree of immunity ought to be obtained from the inoculation with a substance containing the bodies of the dead bacilli as well as the liberated toxins than from an extract from the organs of an immunized animal, since, according to Vaughn, the toxic properties of a given bacterium are dependent on the poisonous character and solubility of the cell contents and the permeability of the cell-wall. This would give a toxic substance of greater strength and hence from its irritating effect on the body cells would cause the production of a greater amount of antitoxin.

The protection against typhoid fever though only of short duration and even of partial extent is of vast importance, particularly when the conditions are favorable for its dissemination as in army camps, prisons, etc., where large number of individuals are segregated under poor hygienic conditions. In the not far distant future typhoid fever will be deprived of much of its present dangers and will take a place relatively with that of diphtheria in its present slight degree of harmfulness.

The St. Paul Meeting and Yellowstone Park. — Arrangements have been completed for an excursion of the members of the American Medical Association to Yellowstone Park. The Committee of Arrangements has succeeded in persuading the officials to open up the Park a week earlier than usual in order to accommodate the Association. A special train will be run from St. Paul to Yellowstone Park for which a low rate will be given. Further announcements will be made later. The Yellowstone National Park contains more natural wonders than are to be found anywhere else in the world, and this will be a rare opportunity for Eastern visitors to see what this portion of the Great West possesses.

The State Board of Health of Missouri.—On April 26, 1901, Governor Dockery appointed the following to be members of the State Board of Health of Missouri: Dr. B. G. Dysart, of Paris, Monroe County; Dr. A. W. McAlester, of Columbia, Boone County; Dr. W. F. Morrow, of Kansas City, and Dr. J. T. Thatcher, of Oregon, Holt County. The bill introduced at the last session of the Legislature creating a new Board of Health, having failed to pass the House of Representatives, was defeated and the old law, therefore, continues operative. The members of the State Board of Health whose terms have not expired and who continue in office under the provisions of the old law, are—Dr. C. B. Elkins, of Ozark, Christian County; Dr. D. T. Powell, of Thayer, Oregon County, and Dr. E. L. Standlee, of St. Louis.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of February 7, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

Cerebral Tumor.

DR. GIVEN CAMPBELL presented a case which he diagnosed as cerebral tumor. The patient had had a mole on the side of her nose all her life. Two and a half years ago this mole became inflamed and ulcerated, and was operated upon but recurred. A few months later another operation was performed. The soft parts on the side of the nose were thoroughly removed and skin was grafted from the shoulder, since this time there has been no local return. From the physician doing the operation Dr. Campbell ascertained that the microscope showed the growth to be an epithelioma. A few weeks ago she came to the clinic for treatment, stating that she had noticed since last February that two fingers of her right hand were gradually becoming weak; the weakness was present in both flexion and extension, though slightly more pronounced in extension, and has gradually progressed ever since. Anesthesia involved the whole of the ring and little finger as would be the case if the 8th cervical root were involved, but not extending along the middle of ring finger or the other fingers and further on up the arm as would be the case with the ulnar nerve involved. The entire hand is somewhat weak. Grasp of right hand is 40 pounds of the left 60 pounds. The arm also, even the shoulder muscles are somewhat involved. The right pupil is a trifle more dilated than the left. The condition looked to him like a peripheral nerve lesion except that the reflexes in the arm are distinctly increased. This, he said, pointed very strongly to an involvement of the upper motor neuron. The distribution of the anesthesia and the muscular paralysis probably

indicated the seat of the lesion in the cortex and the question arose whether it was a cerebral neoplasm or not. There had been at no time vomiting, headache, vertigo or visual disturbances. The fundus of each is normal.

DISCUSSION.

DR. M. A. BLISS said the case was very interesting and presented some peculiar features. The distribution of the paralysis indicated a peripheral neuritis but all other symptoms of this were absent. The fingers have a slightly glossy appearance but not sufficient to call characteristic, and the reflexes throughout the arm are increased, contrary to what is found in a neuritis. He did not think it probable that the lesion was located in the cord. If the seat of the trouble is in the cortex we should expect to have more irritative symptoms in the beginning or during the progress of the disease than have been manifested. He thought the lesion was cerebral and sub-cortical.

DR. M. W. HOGE had seen the patient on a previous occasion with Dr. Campbell at which time he had made a more thorough examination than this evening. Taking all the symptoms into consideration he thought we were almost obliged to pronounce the condition due to a lesion in or near the cortex, as Dr. Bliss had said, because the symptoms are not compatible with a lesion situated lower down in the motor tract. The reflexes are increased not only in the arm but also in the leg on the same side which would not be the case if due to a peripheral lesion or to one situated in the cord in the region of the 8th cervical nerve; nor could the lesion be in the neighborhood of the internal capsule and be so limited and at the same time involve both the motor and sensory tracts. The sensory area of the cortex is not so well mapped out as the motor area but they seem to be situated in about the same region, the sensory area being somewhat more extensive than the motor.

He did not think the irritation symptoms mentioned need necessarily be present in a slowly-growing tumor. We might have a neoplasm of considerable size not only without any irritation symptoms, but with few symptoms of any sort until the motor area was actually encroached upon.

DR. CAMPBELL, in closing, said he was glad the patient had been presented as he felt that he had been enlightened in regard to it. The absence of irritating symptoms had caused him to doubt the involvement of the cortex, yet he could not understand how the motor and sensory symptoms could be present unless the cortex was involved, or at least approached. He was glad to know the suggestions of Drs. Hoge and Blis corresponded with his view. He was inclined to think the neoplasm was of the same nature as that for which the operation had been performed on the nose and had by metastasis involved the brain.

DR. GEORGE HOMAN read a paper (see page 355, this issue), entitled

Our Daily Bread.

DISCUSSION.

DR. ALBERT MERRELL said in regard to the changes taking place in baking dough to make bread we should keep clearly in mind the changes that take place in the starch. The statement of the essayist that the temperature of the interior of the loaf does not much exceed that of boiling water is probably true. At that temperature the starch granules are bursted and the product partakes more of the character of ordinary boiled starch in which form it is readily appropriated in the alimentary canal. The formation of dextrine is not obtained until submitted to a very high temperature. What is known as British gum is a form of dextrine manufactured by the action of high temperature alone; a temperature of 400°F. converts starch into a soluble form of dextrine and the external part of the loaf alone is thus acted upon in the oven.

The cellular condition is an important feature and he thought it very desirable to bring it about without the introduction of foreign substances for the purpose of giving off carbonic acid gas.

He took exception to one point in the paper, — that was the statement that domestic bread making should be abandoned. In his experience the best bread he had seen was baked in his own kitchen, or that of some one who had an equally good cook. The ordinary

baker's bread he thought could not compare with the home made article properly cooked.

Of the mechanical means for distending the loaf, the cream of tartar and bicarbonate of soda baking powder was the original powder and was for years made in private kitchens. It immediately followed the old sour milk and buttermilk process. In the latter the uncertainty in the proportions of bicarbonate of soda and salt and lactic acid often resulted in an excess of alkali, seriously retarding digestion and thus caused the abandonment of this process.

Alum baking powders were first heard of a great many years ago, but not in the present form. A party in Ohio made an alum powder, using raw or unburnt alum, and it had a very extended sale because it was cheap. Later, burnt alum, the so-called dessicated or dehydrated alum was used. There are three types of alum—soda alum, potash alum and ammonia alum. The soda alum is not frequently found on the market but is used in chemistry. Crystallized alum contains twenty-four molecules of water of combination which is expelled at a high temperature leaving a dehydrated alum which is insoluble in cold water. He spoke of this in explanation of the marvelous sale of alum baking powders and their extensive use. Most of the cheap hotels and some of the dearer ones, use it, and wherever hot bread is served it is almost always prepared by one of the soda and alum combinations. The reason why the mixture indicated under the head "straight alum" powders is made of dehydrated alum is that when mixed with bicarbonate of soda and placed in the flour to make a dough and cold water added the gas is not given off while the mass is cold, but as soon as placed in the oven and the heat applied evolution of carbonic acid gas occurs and, of course, the dough rises and becomes more and more cellular in texture. This is done in the large restaurants where a half barrel of flour may be mixed at one time and placed on a table, and the last biscuit made from this flour is as good as the first.

In the cream of tartar powder the activity of the constituents is so great even in the presence of cold water, that it is necessary to hasten the dough into the oven and then have its temperature just right.

"Alum phosphate powders" originated in an attempt to improve

the baking powder, the theory being that if calcium phosphate is brought in contact with bicarbonate of soda and alum is also present there will be a reaction first in the presence of cold water between the phosphoric acid and the soda, causing a prompt evolution of gas and when placed in the oven the heat would cause a further reaction between the balance of the acid and the mass becomes very light.

The bitterness of glauher salts, alluded in the paper, is prevented by using a certain proportion of alum. But calcium phosphate is hygroscopic and it makes no difference how dry the powder is when the can is opened it will absorb moisture from the atmosphere and the powder will finally lose it leavening power. Mixture with a certain proportion of dried or burnt alum corrects this tendency of a mixture of soda and calcium phosphate to lose its leavening power and this explains the mixture known as alum phosphate powders.

DR. JOHN ZAHORSKY was glad to see the stand taken that aluminum hydrate was harmless and that the prejudice against alum baking powders should not exist. He had read some of the testimony in the trial referred to by the essayist and was impressed with the positive manner in which assertions were made at that time for which there were no grounds except prejudice. Since this investigation clinical tests have been made on the gastric secretions after the use of alum bread and it was shown to have no effect

A point but slightly touched upon was that in brown bread the gluten of the wheat is retained and some authorities urge this as an advantage because of the increased proteids. It is known, however, that the vegetable albumin is not as easily digested as the animal proteids and the gluten casein particularly, is not equal to meat proteids or the casein obtained from milk. Children, he said, suffer a great deal from indigestion when beginning to eat bread and he believed this could often be accounted for on the theory of badly cooked bread; it is frequently vomited after a while in large masses somewhat resembling curds of milk.

The preparation of the yeast for bread baking deserves more scientific study than it has had. There are often other bacteria beside the *saccharomyces*, which ought to be eliminated. These may cause slight changes in the proteids, and the yeast of the future ought to be

a pure product. The bacteria on the outside of the loaf are killed by the heat of the oven but many may remain in the center which are not so acted upon; these often cause nausea, and induce fermentation in the stomach and intestines. Therefore, he thought the subject of yeast for bread making, from a commercial standpoint and more particularly from a hygienic standpoint, should receive more attention than it has had in the past.

DR. JOHN GREEN, JR., said there were a large number of restaurants in London belonging to the so-called "Aerated Bread Company." Dr. Merrell had alluded to the process of introducing atmospheric air into the dough, and the speaker wondered if the bread served in these restaurants were actually aerated in this mechanical way. It was certainly an excellent bread as far as the taste and appearance was concerned.

It has been said that whole wheat bread has a decided advantage in conditions of constipation because of the mechanical irritation of the undigestible constituents, thus conducing to a restoration of the normal tone of the bowel. The speaker had also heard this denied. He asked Dr. Homan to give his opinion on this point.

DR. W. S. BARKER did not hear the paper read and could not discuss it. He asked, however, if anything had been said about cleanliness in the handling and delivering of bread to the people. This he considered a matter of great importance. Some one had suggested at one time that bread be delivered in paper boxes or cartons similar to the manner in which crackers are handled. Some method ought to be devised and generally adopted. We know how the bread is at present hauled about in wagons and dragged out over the steps by the driver and mingled with all sorts of bacterial filth—a defect which is certainly remediable.

DR. AMAND RAVOLD expressed regret at not having arrived in time to hear the paper of Dr. Homan. Some years ago, following the publication in a monthly magazine, of the statement of a New York physician that baker's bread contained bacteria in large numbers, he had carried out a series of experiments to ascertain the truth of the statement. The conclusions reached were, that the high heat—over 500°F., to which the bread was exposed in the oven, and the length of

time necessary to bake the loaf practically destroyed all the bacteria in baker's bread. He had found the center of the smaller loaves sterile, but some of the larger loaves, so-called "home made" bread occasionally showed growths of bacteria from the center of the loaf. The bacteria belonged to the spore-bearing group, the *bacillus subtilis* being most frequently found. No growth of the *saccharomycetes* "yeast cells" were ever obtained.

The aerated bread spoken of was at one time, about 1876, made and sold in this city. He had enjoyed eating it in boyhood, and on inquiry some years later, was told by a member of the firm who manufactured it, that when first introduced here it was sold in large quantities, but after a time it seemed to pall upon the appetite, and the firm gave up its manufacture, because people were tired of it.

In regard to baking powders, Dr. Merrell in his very able summary of the chemistry of baking powders failed to state whether or not any of the alum remained in the bread after baking, and if so whether or not it was harmful in the minute quantities that might possibly remain. Alum, in his opinion, is not a cumulate drug, and in order to produce deleterious results with it the dose must be very large.

He further expressed much amusement occasioned by the profound knowledge (*sic*) of chemistry displayed by a number of local physicians who testified in the recent Baking Powder litigation in this city.

DR. HOMAN read the following extract from the paper of Prof. H. W. Wiley :

"Among all the exhibits of bread and bread-making at the Paris Exposition the one which interested me most was a system of milling and baking combined. This system has a double purpose: (1) To make the flour more palatable and more nutritious than that made by the ordinary roller mill; and (2) to make it immediately before baking, so as to secure for the loaf a flour which is absolutely fresh. It is well known that all food substances when ground to a fine powder have a tendency to become oxidized. As is the case with coffee, which is best when freshly roasted and freshly ground, so it is with cereal flour, which is never so aromatic, so palatable, or so nutritious as at the moment when it is first made.

"The Schweitzer system of milling and bread making secures the

two points mentioned above. In Paris a mill and attached bakery, on a somewhat large scale, illustrated the method which is employed in supplying bread to a populous community. So perfect is the milling system employed that the smallest mill, intended for use on a farm, and driven by hand, as a coffee mill would be run, makes flour identical in composition with that made by the largest machine. The Schweitzer system, in regard to the milling operations, is a return to the old system of mill-stones, with the exception that corrugated steel grinders take the place of the millstones of the olden days. These grinders are so accurately adjusted as to admit of the making of the finest flour, while avoiding actual contact of the two grinding surfaces. The simplicity of the apparatus, its cheapness, and the ease with which it can be installed commends this system particularly for domestic use and for the supply of villages and small communities. Nevertheless, it is capable of being operated on an extensive scale, as is demonstrated by the large establishment at La Villette, Paris, where more than 100,000 pounds of bread are made per day from flour not more than twenty-four hours old.

"This system of milling also retains in the flour many of the nutritive elements which the roller system eliminates. The germ and many of the gluten cells, especially those situated near the outside of the grain, in the aleurone layer, become flattened on passing between the rollers, and their particles are not able to pass through the bolting cloths; hence they do not appear in the flour. For this reason the flour made with the roller process is extremely white and very smooth to the touch; its whiteness being due to the preponderance of starch, and its smoothness to the crushing of the starchy particles by the mill rollers. On the other hand, the flour produced by the Schweitzer system has a marked yellow tint and is granular, because the particles composing it have never been crushed, but have been simply separated and torn by the grinding surfaces.

"The flour produced by this grinding process contains especially the phosphatic elements of nourishment, which are so abundant in wheat, particularly in the nuclein of the embryo, and which are largely eliminated by the ordinary roller process of milling. This difference in the two flours is beautifully shown by means of skiagraphy, in other words, in actinographs made by the use of the Röntgen rays. If the two kinds of flour be placed side by side on a sensitized plate and subjected to the action of the Röntgen rays, it will be seen that the flour made by the ordinary milling process produces a very faint image, while that made by the Schweitzer system produces a much darker shade. This is due to the fact that the phosphatic elements tend to

retard the passage of the Röntgen rays, while the starchy elements permit them to pass with but little obstruction. Chemical analyses show that the flour made according to the Schweitzer system has more than twice as much phosphatic material as that made by the ordinary roller proces. The importance of this fact in respect to nutrition should not be lost sight of, and we must admit that nutrition, not whiteness of color, is the principal object of bread-making."

In answer to questions and statements of other speakers he said he quoted from the *Forum* article in regard to the baking of bread in private kitchens and that Dr. Merrell took issue with Prof. Wiley and not with himself on this subject. Dr. Homan did not doubt that a competent cook with proper material and that essential, properly ground flour in a fresh state, could make good bread. But the flour on the market is often old and stale especially when prepared by the roller process and the cook is at a disadvantage in this respect.

He said he would feel rewarded if he had done something to put one absurd notion in its grave, and that was in regard to the alleged unwholesomeness of eating hot bread. There can be no objection from a dietetic standpoint to hot bread but he believed all who had had any experience in the profession would agree with him, however, that this false idea was still prevalent. The idea that the temperature and not the quality of the bread was the objectionable feature indicated an entire misapprehension of the conditions.

Dr. Merrell mentioned the excellent quality of bread made in his own kitchen and the speaker did not question the statement. While in New Mexico last year, in a town of a few hundred inhabitants, he had met a native Mexican woman who produced the best domestic bread he had ever tasted. It was the most perfect example of the definition of good bread quoted by him, and conformed to the description in every particular—pourousness, lightness, thickness and friability of the crust, development of dextrine, in short, every feature of good bread was present.

He thought one of the reasons why our bread is so—execrable, he could almost say—was the departure from the old style of baking, the so-called Dutch oven method; that is by heating the oven by burning hard wood in it and after the bricks of the oven were thoroughly

heated, raking out the coals and putting in the pans; the temperature, high at first, gradually declined and thorough penetration of the heat throughout the loaf was obtained.

Aerated bread to be successfully produced requires the investment of considerable capital and suitable machinery. Such bread, of course, can not be prepared in the domestic kitchen.

He shared thoroughly the view expressed by Dr. Barker in regard to the uncleanly conditions often attending the delivery of bakers' bread. He had seen the bread wagon, at the place where he took his meals, drive into the alley and the driver with dirty fists toss the bread from the open wagon to the cook; if a loaf fell on the ground it was picked up and thrown in as the others were. For this reason he had insisted that bread served to him there should be re-baked. He suggested too, that bakers generally be required either to enclose each loaf in a paper bag so as to protect the bread while being hauled through the streets, or that a canvas bag, similar to the postal mail bag be provided, with lock and key and have the loaves put in this bag at the baker's, the bag then locked and remain thus until it reaches the place of delivery. In this way there would be no contamination between the bakery and the place where the bread was to be delivered.

In regard to alum, it is simply used to produce carbon dioxid, and after combining with the bicarbonate of soda its work is ended. As he had said in the paper the competitors of the alum baking powders people took a shrewd advantage of the public prejudice against alum which was aroused by attempts many years ago to use alum for the purpose of enabling an inferior article of flour to be used, thus making the loaf white, and also increasing its weight, and these frauds were properly made the subject of legislation, being declared felonies by English law.

REPORTS ON PROGRESS

MEDICINE AND THERAPEUTICS.

Antityphus Extract.

Valentin Jez (*Wiener Klinische Wochenschrift*, January 24, 1901) has prepared an extract from the spleen, thymus, bone-marrow, brain and spinal cord of animals that have been immunized against typhoid fever, and which he has administered in this disease in man. He gives it *per os* in tablespoonful doses at intervals of one or two hours, according to the severity of the symptoms, until the occurrence of a remission; it is then given every three hours until the morning temperature does not exceed 38°C. From then on, three doses a day. Ordinarily the morning temperature declines to 38°C. in three days, so that patients receive on an average 400 to 500 grams of the extract.

After administering it in several cases he concludes:

1. The Jez antityphus extract has a specific therapeutic effect in typhoid fever.
2. It has no injurious effect and no unpleasant symptoms follow its administration in large doses.
3. It is of assistance in making a differential diagnosis.
4. Given regularly in typhoid it reduces the temperature and strengthens the pulse.
5. It shortens the duration of the fever and diminishes or entirely neutralizes the effect of the typhoid toxin.
6. Given by the mouth it produces none of the sequelæ sometimes resulting from hypodermic injection of animal extracts.

Cardiac Hypertrophy and Renal Disease.

Otto Gross (*Ibid.*, January 10, 1901) comparing the different theories of the relation between kidney disease and secondary hypertrophy of the heart, considers that not enough importance has been attached to the increased thirst, and consequent increased ingestion of

fluids, in the contracting kidney with polyuria, in producing the increased blood-pressure which leads to hypertrophy of the heart.

When a portion of secreting substance of the kidney has been lost, there results, first, an increase in the urinary principles in the blood; these have a diuretic effect on the remaining glandular tissue of the kidney and tends to thus promote their own excretion by stimulating it to increased activity, and also to their irritating effect upon the mucous membrane of the digestive tract cause thirst, which leads to the ingestion of additional fluid, which also favors diuresis. Thus the organisms endeavors to rid itself of the accumulating urinary substances.

However, this increased ingestion of fluids by increasing the mass of the blood throws more work upon the heart and leads to hypertrophy of the left ventricle, and eventually to its exhaustion.

That the hypertrophy occurs in the left ventricle is attributable to the fact that it forces the blood through more resisting arteries and tissues than does the right, and also a greater distance.

The prime indication is to guard the heart, since once exhausted it can not be replaced, while the urinary constituents may be vicariously eliminated. Consequently the ingestion of fluids should be limited, and thirst producing articles avoided.

HOGUE.

NEUROLOGY.

Bromides in the Treatment of Morphine Habit.

Elbert Wing (*Journal of Mental and Nervous Diseases*, February, 1901) reports a case in which the above treatment proved fatal. The patient was the wife of a physician and was formerly a trained nurse. She was 28 years old, in excellent health and had a normal heart, lungs and kidneys. She was taking 10 to 15 grains of morphine daily, hypodermically. Treatment was commenced with 2 drams of bromide of soda in a half a glass of water every two hours until 10 drams had been given; the second day 12 drams were given; the third day 16 drams. The last-named dose was maintained on the

fourth day, but evidences of collapse caused a reduction to 10 drams on the fifth day. On this day granular and hyaline casts appeared in the urine, and on the sixth day pneumonia developed, resulting in death on the seventh day.

The effects—extreme restlessness, delirium, rapid and weak pulse, rapid respiration, somnolence, cyanosis, increased flow of saliva, and, incidentally, pneumonia, nephritis and death.

Dr. Church, in discussion, said 33 per cent of reported cases had proved fatal where the treatment was carried out according to MacLeod's plan. Dr. Loder said if 400 grains be given at a dose, in twenty-four hours but one half of it will have been excreted. Drs. Bill, Tenneck and Ware have severally proven that a sixth of a grain dose remained after forty eight hours, and traces may be found in the urine weeks after the cessation of the administration. Dr. King emphasized the necessity of smaller doses of bromide and withdrawal for at least twenty-four hours if toxic symptoms appear.

Periodical Insanity.

A. R. Defendorf (*Philadelphia Medical Journal*, February 16, 1901) says the tendency to recognize periodical insanity as a distinct disease by the German and French psychiatrists has not been followed by English and American writers. Examination of the records of the Connecticut, McClean and Worcester Hospitals for the Insane, show a percentage varying from 14 to 23 of recurrent attacks.

Periodical attacks take three forms—maniacal, depression, or mixed. In the maniacal forms motion is constant, ideas crowd to incoherence, fatigue does not occur, consciousness is not clouded, association of ideas is lost, hallucinations and delusions are rare.

In the depressive form of attack there is psychomotor retardation and utter dearth of ideas, and the emotional state depression, anxious, gloomy and despairing. Hallucinations and delusions are prominent features and are apt to be persistent, with corresponding emotional attitudes.

The mixed form may be a stuporous mania interrupted by sudden motor activity with exhilaration, or a maniacal condition with longer or shorter depressive moods.

Defective heredity obtains in 70 to 80 per cent; other causes are shock, acute diseases, and mental strain. Prognosis is bad as to freedom from recurrence, but there is little mental deterioration even after several attacks. Lucid intervals varying from weeks to months occur except in a very small number of cases. The attacks are usually of a uniform character in the same individual.

Treatment of Periodical Insanity.

John Madison Taylor (*Journal of Mental and Nervous Diseases*, March, 1901) reports success of greater or less degree in relieving this class of sufferers. He quotes Gardiner, that the pathology resembles that of senility—differing in intensity and degree. Three characteristic changes are found:

1. Perivascular sclerosis with a predisposition for the dorsal parts of the lateral and posterior columns.
2. Degenerative changes of the multipolar nerve cells.
3. A general hyperemia, as evidenced by the multiplication, thickening and local dilatation of the blood-vessels, together with cellular infiltration.

Taylor notes certain facts. In some cases there is a marked lack of muscular tone, in others no defect in muscular power. Usually extension is much weaker than flexion. A tendency to contractures more marked in the skeletal muscles, in the tendinous insertions and some distance beyond them, and very conspicuous in tissues immediately subjacent to the skin.

The skin loses elasticity, shows a tendency to branny desquamation and lack of secretory action.

Where lack of extensor capacity was greatest there was absence of normal subjective sensory appreciations.

The system of exercise consisted of active and passive movements, especial attention being given to correcting postural faults and in increasing extensor strength. Massage of skin and subcutaneous tissues, with oil inunction, was used. Passive movements to limbs, neck, back and jaws were used to overcome contractures. Posturings, stoopings, stretchings and deep breathings were included.

At first the movements are followed by great soreness and usually

accompanied and followed by a severe frontal headache, but after a few times this disappears and does not recur.

BLISS.

The Crossed Sciatic Phenomenon.

J. Fajerstajn, Lemberg, (*Wiener Med. Wochen.*, January, 10, 1901) claims that it has been a recognized sign of sciatica that in this disease the thigh may be flexed on the trunk without producing pain if the leg be at the same time flexed on the thigh; but if the leg be extended and the whole limb flexed toward the abdomen, pain is produced in the trunk of the nerve, often extending through its branches, and is due to the stretching of the nerve to which this movement gives rise.

Fajerstajn reports the results of a study by him of a related phenomenon which he first observed in 1896, and which he designates the crossed sciatic phenomenon. This consists of a pain in the affected nerve of the same character as aboved described, when the opposite limb is flexed on the trunk.

In order to explain the manner of production of this pain he performed a series of experiments on the cadaver. First, exposing the sciatic nerve he finds that flexion by the above method does stretch the nerve. Further, on opening the spinal canal in the lumbo-sacral region he finds that the traction effect extends to the branches of the plexus and to the membranes of the cord, drawing the cord and its membranes toward the side experimented on and thus exerts traction upon the plexus of the opposite side and the nerves arising from it. This seem to be the explanation of the manner in which the crossed sciatic phenomenon is produced, viz., that flexion of the limb on the sound side by putting that sciatic nerve on a stretch, draws the cord and its membranes toward that side, and thus exerts traction upon the affected nerve. In 41 cases he finds the symptoms present in 25 and absent in 16.

HOGÉ.

PEDIATRICS.

Investigation Concerning the Prophylaxis of Diphtheria.

The *Annales de Med. et Chir. Infant Pediatrics*, March 1, 1901, submitted certain questions to leading practioners of Europe, and some of the answers are here given :

1. What bacteriologic method do you employ in order to obtain a positive diagnosis of diphtheria ?

Bacteriologic examination alone not always positive.—Filatow. Microscopic examination and cultures sufficient.—Troitzky. Inoculation into animals sometimes necessary, if clinical diagnosis is uncertain.—Vargas. Clinical and bacteriological must be combined.—Kischinsky A culture of the exudate should be made on Loeffler's serum, and if the long bacteria are found, diphtheria is present.—Goodall.

2. Do you consider the bacillus pseudo diphtheria a special and distinct species or only an attenuated form of the true diphtheria bacillus ?

The pseudo bacillus is a true diphtheria bacillus deprived of its pathogenic powers.—Filatow. Pseudo-bacilli are a separate species of germs.—Goodall.

3. What importance do you attribute to the finding of Klebs-Loeffler bacilli in the mouths of healthy individuals ?

Micro-organisms of pathogenic character may be present in the mouths of healthy persons without producing any bad effects.—Troitzky. Bacilli in the mouths of healthy persons have the same significance as the latent stages of any infection.—Vargas.

4. Upon what do you base the determination of the period of isolation of diphtheritic patient ?

Isolation for fifteen days after the disappearance of the symptoms.—Filatow. Isolation for three or four weeks after the disappearance of the membrane.—Troitzky. Isolate for six days after disappearance of the membrane.—Vargas. Isolation for six weeks from onset of the disease.—Goodall.

The Pathogenesis of Gastroenteritis in Infants.

Jemma (*Pediatrics*, February 15, 1901; *Rev. Mens. d. Mal. d. L'Enf.*) concludes as follows: The bodies of bacteria which are present in milk may produce grave gastrointestinal disorders in the animals which are fed on the liquid. If the milk be suspended at the end of a certain time, say twelve to fifteen days, and if sterilized milk or breast milk be substituted, the animals may temporarily survive, but soon die. At the autopsy the lesions of gastroenteritis are found, together with fatty degeneration of the liver. The same lesions are found in the animals which survive.

Milk containing the cadavers of the colon bacillus produces in young children less severe lesions than that which contains the cadavers of all the bacterial species which are commonly found in milk.

Milk which contains only the cadavers of the proteolytic germs rarely give rise to disturbances.

Scurvy and Rickets in Young Children.

Hare (*Medical News*, February 16, 1901) believes that the most frequent error in diagnosis in scurvy is that the child is suffering from muscular or articular rheumatism; this decision being reached by reason of the fact that the child seems to suffer great pain upon movement, and sometimes has a small degree of fever. The painful manifestations may be the only evidence of the malady.

In others, a spongy condition of the gums, which tend to bleed. The other symptoms of scurvy is the development of petechia. In still others periosteal hematmata are found. It is a disease among the wealthy.

Three cases are briefly reported: The first was mistaken for spinal disease; the second case had been diagnosticated meningitis, while the third presented the symptoms of paraplegia.

The Woolen Yarn Truss in Infantile Inguinal Hernia.

Boland (*Boston Medical and Surgical Journal*, February 14, 1901) recommends the woolen yarn truss. His résumé is as follows: The use of some retentive apparatus will hasten and assure the natural tendency toward cure in infantile hernia. The worsted yarn truss is

easily made to measure at the bedside; it is cheap, comfortable and can be worn by frail or delicate infants, where the ordinary truss is useless or too irritating. With this or any other truss vigilance and intelligence must counteract the underlying or associated causes of hernia. He reports several cases in which this truss proved successful.

Observations Upon the Temperature of Apparently Healthy Children.

Donald (*Arch. Pediatrics*, March, 1901) reports a series of experiments to determine the temperature of healthy children. Twenty healthy children were selected and during two weeks the temperature was taken twice daily. Out of these 560 records, 13, or .02 per cent, showed 100°F. or over. On one occasion a child was found with a temperature of 101°F. The minimum reading showed 13, or .02 per cent, to be under 98°F. On a single occasion a temperature of 96.4°F. was found. In about 30 per cent of the cases examined there was a tendency to a high temperature, that is, a temperature of over 99°F. These experiments were made in August, 1899.

Myotonia in Infants.

Hochsinger (*Wein. Med. Wochen*, Nos. 7-12, 1900) believes that persistent muscular spasms in childhood are to be distinguished from tetany. No hyper-excitability of the muscles and nerves either in mechanical or galvanic irritation is present as in true tetany. In tetany the tonic contractions are intermittent and painful.

Tetany affects children between the fourth and twentieth months; the persistent form is found during the first three months. The former affects rachitic, the latter non-rachitic infants.

These persistent tonic spasms are an exaggeration of the physiological hypertonia of the muscles of newly-born infant. The flexors of the extremities are slightly rigid; slight flexion of the fingers or toes is assumed even in perfect health. A little psychical excitement is sufficient to produce a tonic spasm which doubles the hand into a fist and strongly flexes the toes. Trousseau's sign is present at times. Prolonged pressure on the brachial plexus induces flexion of the fingers.

In the second degree, persistent symmetrical spasms of the hands and feet are present; it may persist for many months without change. Pseudo-tetanus is the third degree of myotonia. In this form the myotonia extends to the muscles of the trunk and neck, and even to those of the face, producing a condition resembling tetanus. Myotonia arises in the course of intestinal disease, syphilis and dermatitis.

Constitutio Lymphatica.

Bovaird (*Arch. Pediatrics*. March, 1901) presented specimens taken from an infant of four months at the New York Foundling Hospital. [Specimens were presented before the New York Academy of Medicine]. Distinct evidence of rachitis was present. The thymus, the cervical, bronchial, and mesenteric lymph nodes were enlarged; the spleen was larger than normal.

In the discussion which followed, Holt said he had seen four similar cases. The general condition of the lymphatics was probably less important than the size of the thymus. It was hard to say what was the fatal attack.

Kakels reported a case in which edema of the brain was found in addition to the enlarged lymphatic nodes.

Chapin referred to a sudden death due to an enlarged lymph node pressing on the recurrent laryngeal nerve.

Herman thought that death was caused in these cases of enlarged thymus by pressure on the recurrent laryngeal nerve.

ZAHORSKY.

MISCELLANY.

THE EMERGENCY HOSPITAL AT THE PAN-AMERICAN EXPOSITION.

One of the happy features of the Columbian Exposition at Chicago, in 1893, was the hospital for taking care of the sick and injured among those in attendance there, and the employes on the grounds. That this was not an unimportant part of the Exposition was shown by the large number of patients cared for during the period of its existence. This admirable and essential feature has been carried out at the different expositions that have since been held, and now comes the Pan-American with one of the prettiest and most complete hospitals that have ever graced the grounds of an exposition, and one which will be most gratefully appreciated by those who may have to sojourn therein.

The hospital building stands near the west end of the Mall. In this, floor area rather than elevation is one of the prominent features in its construction, where utility, first and last, was the prime consideration in its design. In conformity to the general exposition plan the free Spanish renaissance type has been used, in this instance, with a strong leaning toward the old mission interpretation.

The hospital has a frontage of 90 feet on the Mall; the main wing a depth of 38 feet with a height of but one story, except in the center, where it assumes the form of a square tower with a rounded top; this tower extends to the height of two stories and is surmounted with two flagstuffs, one of which supports the Exposition flag, the other the well-known Red Cross banner.

A rear wing one story high runs back from the center portion a distance of 56 feet with a width of 32 feet.

In appearance it is that of a low wandering adobe mission house covered with heavy red tiling. Any antiquated illusion that may be conveyed by the outside appearance of this building is, however, at once dispelled by a glance at the interior. Modern arrangements that

are both convenient and sanitary have been installed. Approved medical and surgical appliances have been carefully selected in regard especially for their adaptability to emergency work and the exigencies that are likely to arise.

The main hospital entrance is from the Mall opening directly into a handsome rotunda decorated with tropical plants and suitable hangings of pictures, drapery, etc.



The main office is situated at the farther left hand corner of this rotunda under the staircase which forms an irregular alcove. It contains telephone and electrical annunciator, and messenger call service, with other modern and necessary appurtenances. The first floor front contains in the extreme western wing two male wards with seven cots each, a bath room, physicians' office, a morgue and a linen chest. The eastern wing contains a woman's ward, large enough to hold a dozen cots, with direct communication to the woman's bath room. This wing also contains an office for the superintendent of nurses, private physician's office, a linen closet and other conveniences.

The upper story is intended for the use of the resident physician and the necessary attendants. It is fitted up with four bed rooms and a bath room. The rear wing extending back from the main entrance contains the operating room, sterilizing department and instrument cases. Immediately across the hall is the emergency bath room and patients' waiting room. Still farther down the corridor is located the

kitchen, pantry and dining room, which is intended for the use of the patients only, as the staff have their culinary department in the service building, situated but a few yards distance. In the extreme southern end of this wing is the storage room for the electrical ambulance; this room also contains a station for recharging the batteries, electricity for this purpose being brought from an electric circuit provided for the electric launches on the Grand Canal. In addition to the two electrical ambulances, a steam or gasoline motor ambulance will be provided to be ready in case of a possible failure of the electrical current. The building is provided with natural gas for heating purposes and for cooking when necessary for the patients.

Water, gas and electricity is carried to every part of the hospital in the most approved manner. The building is plastered throughout and rendered sanitary and germ proof, so far as possible, in every instance. The staff in attendance are uniformed.

In the matter of equipment and appliances, everything is of the newest and best. A rubber-tired litter, sterilizing apparatus with an apartment for instruments and another for towels and linen, have been added.

Roswell Park, M.D., is the Director; Vertner Kenerson, M.D., Deputy Director, and Alexander Allen, M.D., is the Resident Physician, a staff which will at once inspire confidence in all who are acquainted with these gentlemen or their work. In regard to the importance of this adjunct to the Exposition it may be said that up to March 1, five hundred and four cases have been treated on the grounds, only one of which proved fatal. These include all forms of sickness and accidents to workmen employed upon the construction work. At the Omaha Exposition the number of cases treated was over 3,000, while the history of the hospital at the World's Fair in Chicago gives a total of 11,602 medical and surgical cases treated, resulting in 69 deaths.

We hope that the necessity for the use of the hospital at the Pan-American will be limited, but we rejoice to know of the excellent preparations that have been made for the comfort of those who may have to be cared for in it.

NOTES AND ITEMS.

The Medical Association of Missouri will hold its forty-third annual meeting in Jefferson City on May 21, 22 and 23, 1901. In many respects this will be the most important as well as the most interesting meeting ever held by the Association. In view of the changing conditions in the practice of medicine here as elsewhere, a new plan should be devised for the purpose of interesting in the work of the Association every regular practicing physician in the State. This is a matter of vital interest to every member of the profession in Missouri, each of whom should attend this meeting and endeavor to promote the success of the efforts of the Association in whatever direction they may be made. The sessions of the Association will be held in the Representatives' Chamber of the Capitol, for which an attractive program of varied interest has been prepared. The members will be welcomed by Governor Dockery, who, though he has retired from active practice in the ranks, has not lost his interest in the profession and its welfare. Railroad rates of one and a third fare for the round trip, on the certificate plan, have been granted on all the roads in the State, and a large attendance is anticipated.

Coming Medical Events.

The Michigan State Medical Society will hold its thirty-sixth annual meeting at Battle Creek, on May 15 and 16, 1901.

The annual meeting of the Indiana Medical Society will be held at South Bend, on May 15, 16 and 17, 1901.

The Iowa State Medical Association will celebrate the semi-centennial of its organization on May 15, 16 and 17, 1901, at Davenport. The handsome program which has been issued for this meeting contains a number of commendable features, one of which is a synopsis immediately following each paper that has been placed on the program. At this meeting the work of reorganizing the State Association and of

establishing in each county a medical society which shall be a branch of the State organization, will be taken up.

The American Pediatric Society and the American Orthopedic Association will each hold its annual meeting this year at Niagara Falls. The former on May 27, 28 and 29, the latter on June 11, 12 and 13, 1901.

The twenty-sixth annual meeting of the American Gynecological Society will be held in the Fine Arts Building, 203 Michigan avenue, Chicago, on May 30 31 and June 1, 1901. A cordial invitation is extended to the profession to attend.

The American Medical Editors' Association will hold its annual business meeting in the Lowry Arcade Building, St. Paul, Minn., on June 3, 1901. A few literary sketches on matters that lie close to the heart of the medical editor will be presented and an opportunity will be given to every member to express himself in full, previous to the banquet, which occurs at 9 P.M.—after that he might find it too difficult. The meeting of the A. M. E. A. is one of the most pleasant features of the great medical conclave, to which it is not one of the *lesser* satellites.

Recent Medical Meetings.

The Medical Society of the State of Tennessee held its sixty-eight annual session at Nashville, on April 9, 10 and 11, 1901. The President, Dr. J. A. Crook, of Jackson, presided.

The Medical and Chirurgical Faculty of Maryland held its annual conclave at Faculty Building, 847 North Eutaw street, Baltimore, on April 23, 24 and 25. This is one of the strongest of the State organizations and has among its members a goodly number of the most celebrated medical men in America.

The Texas State Medical Association enjoyed its thirty-third annual meeting at the Harmony Club, in Galveston, on April 23, 24, 25 and 26, 1901. In accordance with the size of the State, everything therein is arranged on a liberal scale, and on that account it required four days to complete the excellent and varied program prepared for the meeting.

The Kansas Medical Society celebrated its thirty-fourth annual

meeting on May 1, 2 and 3, 1901, in Pittsburg. The members of the Society are wide awake and progressive, and are contemplating establishing a journal in which their proceedings will be published and which will be the organ of the State organization.

The Nebraska State Medical Society met in thirty-third annual reunion at Lincoln on Tuesday, Wednesday and Thursdy, May 7, 8 and 9, 1901. Not the least enjoyable feature of the meeting was the banquet at Hotel Lincoln, on Wednesday evening. The medical profession of Nebraska have an efficient State organization.

The fifty-sixth annual reunion of the members of the Ohio State Medical Society took place in Cincinnati on May 8, 9 and 10, 1901. The Ohio State Medical Society is an influential body and a potent factor in the medical affairs of that State. Its meetings are replete with interest.

The American Surgical Association met this year in Baltimore under the Presidency of Dr. Roswell Park, of Buffalo. Its sessions were held in the library building of the Medical and Chirurgical Faculty of Maryland, at 347 North Eutaw street, on May 7, 8 and 9. As American surgery is equal to and in some respects ahead of that of any other country, the meeting of this body is one of the most important of the year.

The Georgia Medical Association at its annual meeting in Augusta on April 19, 1901, elected the following officers: President, Dr. J. B. Baird, Atlanta; Vice-President, Dr. T. R. Wright, Augusta; Secretary and Treasurer, Dr. H. L. Jones, Atlanta. The next meeting will be held in Savannah, in April, 1902.

The ninth annual meeting of the Oklahoma Medical Association was held in Oklahoma City, Wednesday, May 8, 1901. The officers were Dr. Charles W. Fink, President; Dr. J. B. Rolater, Vice-President and Dr. B. F. Harriman, Secretary and Treasurer.

The twentieth annual session of the New Mexico Medical Society met at Alamogordo, on May 8, 9 and 10, 1901, and an interesting meeting was held. One of the pleasant feature of the session was a trip to El Paso, Texas, where a reception was tendered the members St Luke's Hospital.

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ORIGINAL CONTRIBUTIONS.

A Case of Splenectomy, With Remarks.

By. J. P. BRYSON, M.D.,

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, February 21, 1901.

SPLENECTOMY is still a sufficiently rare operation to justify the report of a single case, all the more so when the patient is the subject of leucemia, a condition distinctly contraindicating surgical intervention, except for the most urgent reasons.

The patient, Jane McK., aged 27 years. American, single, without occupation on account of her disease, residing in Vienna, Mo., was seen September 25, 1900, on account of what was supposed to have been an enlarged and floating kidney. Physical examination quite easily demonstrated that the large tumor occupying the left side of the abdomen and extending from above the lower border of the rib to and into the pelvis, was not a kidney at all but a very much enlarged and freely movable spleen. I quote now from the hospital records:

Family History.—Father living and healthy at the age of 70 years, mother 61 years of age. Five brothers and one sister.

Past History.—Usual diseases of childhood; mumps at 8 years, pneumonia at 14 years. Menstruation began at 17 years; has always

had dysmenorrhagia. Her present trouble began in early girlhood with pains of a dull, heavy character in the left side, most severe in the left inguinal region. For a long time she had periods of perfect comfort but about one year ago pains become more severe, recurred more frequently, lasting two or three days, with intermissions of the same duration; she had occasional hot flushes, vertigo and persistent cephalgia.

For the last three years her feet and legs, as far as the knees, became much swollen, blue, and even black, painful to the touch, pitting on pressure; no varicose veins.

Examination showed a large tumor on the left side, extending from beneath the ribs down into the bony pelvis. The tumor is quite movable, changing position with the patient's movements, not painful on manipulation, quite firm, round and smooth. No glandular enlargement and no enlargement of the superficial veins.

Urinalysis.—S. G. 1020, dark amber, clear, acid, no albumin, no sugar, no bile, no excess of indican; microscopically, negative.

October 12. Operation. An incision eleven and a half inches in length was made from the free margin of the ribs in a straight line parallel with and two inches to the left of the median line exposed a spleen enormously enlarged, capsule smooth and mottled, showing the thickening of an old perisplenitis, quite dark and congested.

The pedicle was long enough to permit of delivery of the organ. The splenic artery was large, the vein greatly distended, admitting the tips of three fingers on section. The pedicle was tied off in sections; twelve ligatures of No. 9 braided silk being used, the distal end was clamped and the organ removed. At the time of the removal the organ weighed five pounds and two ounces. The wound was closed and the patient put to bed; she rallied well; saline enemata administered; no shock.

October 13. Comfortable, except for gaseous distension; sleeps well.

October 17. Superficial sutures removed, wound healing; blood examination for plasmodia, negative; leucocytes and eosinophiles increased; yeast fungi and mould present.

October 18. Epistaxis and bleeding from the gums. Anterior nares plugged.

October 20. All sutures removed.

October 24. Temperature has gradually risen to 103°F. Diarrhea. Blood again examined — no plasmodiæ found; leucocytes still increased in proportion to red cells. Urine for 24 hours seventeen and a half ounces.

October 25. Urinalysis: S. G. 1030, faintly acid, 2 per cent of albumin, no sugar, some epithelial and mucous cells, urates in excess, yeast fungi and moulds and granular casts; few red blood cells.

October 26. Urinalysis: S. G. 1020 acid, dark amber, slightly cloudy, $\frac{1}{2}$ per cent of albumin, no sugar, mucous and flat epithelial cells, few red blood cells; calcium oxalate crystals, yeast moulds and some granular casts.

October 28. Urinalysis: S. G. 1010, faintly acid, amber, clear, $\frac{3}{4}$ per cent of albumin, no sugar, many bacteria, yeast moulds and a few faintly granular casts. Diarrhea continues.

November 1. The patient very comfortable. Diarrhea has ceased.

November 12. Blood examination: Leucocytes still increased but not as largely as before: eosinophile more abundant, no plasmodia.

November 15. Urinalysis: S. G. 1020, clear, acid, no albumin; no sugar, some mucous cells, calcium oxalate crystals and a few bacteria.

November 19. Discharged from the hospital.

November 23. Blood examined: No plasmodia, very few eosinophiles, white cells not as numerous as before. The patient appears well. No enlargement of the thyroid or lymphatic glands.

RÉSUMÉ.

A large, well-developed woman, aged 27 years, with good family and personal history, but presenting evidences of congenital floating spleen which had become hypertrophied, gradually developed symptoms of obstruction, anemia, dysmenorrhea and intermittent amenorrhea. Within the past year crises of acute pain and shock, becoming more and more severe and frequent, referable to axial rotation of the enlarged spleen, have developed. Absence of lymphatic involvement. Splenectomy followed by neither shock nor hemorrhage. On the sixth day epistaxis and bleeding from the gums which was quickly followed by pyrexia, anorexia, diarrhea and acute nephritis, all of which subsided within twelve days. Recovery is complete and the anemia is distinctly improved two months after operation. During convalescence no enlargement of the lymphatic tissues is demonstrable.

As may be seen, there is an unfortunate hiatus in the rec-

ord, viz., the absence of a competent blood examination before operation. On September 25th, when the urinalysis was made at my office, the blood was, as I recall, also examined, and I got the impression from a verbal report that, while there was a high grade of anemia, there was not a true leucemia. Even in the face of such contraindications there was urgent need for relief, which could only come from operation. The case seemed to be one of congenital wandering spleen, enormously enlarged, and developing symptoms due to displacement, obstruction, pressure, dragging on certain viscera and crises referable to axial rotation. Only after the occurrence of two such crises, causing dangerous symptoms of collapse, was it determined to face the risk of splenectomy.

Both of these crises appeared to be due to rotation of the enlarged organ, the lower border of which slipped over beyond the median line, at the same time that it greatly increased in size and became tender to pressure. Quickly there followed nausea, emesis, a heavy dragging feeling in the epigastrium, rapid pulse, cool clammy skin and great pallor. Under such conditions one may be justified in taking considerable risks as when splenectomy is done in those cases of acute anemia due to lacerations and internal hemorrhage with collapse. Moreover, the pressure symptoms manifested by edema and hyperesthesia of the lower extremities and symptoms of obstructive constipation, were not only increasing but seemed to account, in a measure at least, for the anemia.

Leaving aside the barbarous practice alluded to by Dionis (1733) as unmitling, and the operations for disease said to have been done by Zaccarilli in 1549, and by Ferrerius in 1711, both of which have been discredited, it seems that in late years surgeons have done splenectomy for the following conditions: First, leucocythemia; second, injury or prolapse; third, certain cases of movable spleen; fourth, simple hypertrophy with or without cirrhosis; fifth, sarcoma or lymphosarcoma; sixth, cysts; seventh, hydatid disease.

The operation for leucocythemia is now considered unjustifiable because of its high mortality (over 90 per cent).

Writing in 1896, the late Mr. Greig Smith was able to collect the following summary of tables: Collins, 89 cases, 13

for diseases not associated with leucocythemia; of these 8 recovered. So far there appears to have been done only one successful operation for leucocythemic spleen—that of Franzolini, of Turin, and this is doubtful.¹ Ashurst, 43 for disease, with 31 deaths; 21 for injury or prolapse, all successful.² Nussbaum, 26 cases for traumatic causes, with 16 recoveries. Gilson, 18 operations for injury, all recovered; 37 for disease, with 29 deaths and 8 recoveries.³ Podrez and Kharkoff estimate the total mortality at 73 per cent. Mollieret, 28 cases for disease and 11 for wounds, with same results as above.⁴ Wright, of Manchester, England, tabulated 62 cases; 22 for leucemia, all fatal; 23 simple hypertrophies, with 15 deaths; 7 for malaria, with 2 deaths; 3 for cystic disease, all recovered.⁵ Asch, 90 cases, 51 successful (14 for wandering spleen).⁶ Dr. M. Howard Fussell, of the University of Pennsylvania, collected statistics up to 1890, showing a total of 105, with 57 recoveries and 48 deaths; 28 were for simple hypertrophy, with 19 deaths; 24 for leucemia, with 23 deaths; 26 for accident, with 1 death; 16 for floating spleen, with 1 death; 5 for cyst of spleen, with 1 death. The rest for rupture, suppuration, pernicious anemia and sarcoma. Spanton has collected 25 cases for leucemia, with 24 deaths; 75 for non-leucocythemic spleen, with 28 deaths.⁷ Dr Richard Douglas, 194 cases—For leucocythemic spleen 36 splenectomies, with 31 deaths; simple hypertrophy 59 operations, with 25 deaths; for neoplasm 5 operations, with 3 deaths; for hydatids 6 operations, with 2 deaths; for wounds 43 operations, with 11 deaths.⁸

Summing up, Greig Smith⁹ says: "Operations for leucocythemic spleen are unjustifiable; operations for traumatic

¹Med. Woch., No. 20, 1883.

²International Encyclopedia of Surgery, Vol. V.

³Rev. de Surg., April 10, 1885.

⁴Diction. enc. des Sc. Med. 1883.

⁵Med. Chron., December, 1888.

⁶Inter. Journ. of Med. Sci., November, 1888.

⁷Brit. Med. Jour., November 2 and 9, 1895.

⁸Journ. of the Amer. Med. Ass'n, April 25, 1896.

⁹Abdominal Surgery, Vol. II, page 1093.

lesions are justifiable and safe. For movable spleen excision ought not to be carried out till less severe measures, such as mechanical support or operative fixation have been tried and found ineffectual. For cysts, the spleen may be removed with a fair chance of success, but puncture or incision with drainage ought to have a trial first. In the early stage of malignant disease the operation is justifiable. In the rare cases of primary hypertrophy the operation is permissible if the disease is attended with danger or serious discomfort."

In the case of cysts, abscess and certain cases of wandering spleen, the trend of opinion seems to be toward splenectomy rather than splenopexy, or incision and drainage. In this, surgical opinion seems to run parallel with that in regard to nephrectomy as related to nephrotomy and nephropexy in certain conditions.

Plucker¹⁰ estimates the mortality of splenectomy for certain conditions, as follows: Leucemia, over 90 per cent; essential hypertrophy, 57 per cent; malarial hypertrophy, 55 per cent; hydatids, 40 per cent; sarcoma, 30 per cent.

So far as I have been able to see, the estimates of mortality have been based on the figures given above, but it is encouraging to note that Burtz has demonstrated that the mortality from splenectomy has, in recent years, been diminished, which he thinks may be attributed to improved technique, asepsis and a proper restriction of the cases in which it should be done.

Up to this time only a few splenectomies for floating spleen associated with twisted pedicle causing pain and shock, have been recorded. One such case by Dr. Isaac Scott Stone may be found reported in the *Annals of Surgery*, Vol. XXX, page 321, 1899. So far as I have been able to ascertain no splenectomy has been done in such cases associated with splenic leucemia.

The report of the pathologist which follows, demonstrates that the leucemia in the case reported here was not myelogenous or lymphatic, but splenic. While sufficient time has not elapsed to determine the ultimate result, the case may assist

¹⁰Deutch. Med. Woch., August 12, 1897.

in modifying somewhat the sweeping generalization against splenectomy in cases associated with leucocythemia because of the high mortality, as well as in explaining the few successful operations done in such cases, operations which have been discredited, perhaps, unjustly.

MICROSCOPICAL REPORT OF DR. T. KODIS.

The microscopic examination of the spleen shows great changes in the structure of the tissue. The follicles are absent and the pulp is replaced by connective tissue and blood-vessels. The section has a great quantity of large vessels with round dilatations on the end. Their wall is very thin and covered by endothelia and in some places by spindle-shaped cells. These round and oval dilatations at the blood-vessels are Thoma's ampullæ. The connective tissue is very much increased over the normal quantity; we see between its fibers a great many round cells with characteristics of large lymphocytes. The eosinophile cells and myelocytes, the same cells we find in capsules of the spleen and in the trabeculi.

Such changes in the tissue of the spleen might be present in the following pathological conditions: First, primary megaspleney; second, chronic stagnation of the blood, as in cirrhosis of the liver, and in heart and lung diseases; third, in malaria; fourth, in chronic leucemia. The primary megalospleney shows large cells inside the dilated vessels and in the walls of them. We do not see any such cells in our specimen. The stagnation of the blood and malaria is excluded by the absence of the corresponding clinical symptoms and by lack of deposit of pigment which is always present in old cases of malaria. The infiltration of the connective tissue and of the capsule by lymphocytes show that we have to do here with an old case of leucemia where the hypertrophic conditions of the adenoid tissue disappear and the connective tissue becomes hypertrophied.

NOTE.—The patient presented herself at my office June 7, 1901. Five weeks before she had been thrown from a horse sustaining a severe contusion of the right shoulder which was also dislocated. Her health had been excellent and she ap-

peared strong and well except for some stiffening and thickening about the shoulder. There was nothing in her general appearance to indicate that she had ever been the subject of leucemia.

At my request Dr. Given Campbell made an examination of the blood. The report follows.

BLOOD EXAMINATION REPORT OF DR. GIVEN CAMPBELL.

The patient was seen June 7, 1901, and her blood examined; result of examination was as follows: Blood normal in color but seems a trifle thin in consistence. At the point of puncture the blood flowed unusually profusely. Hemoglobin estimated, by Hammerschlag's method, reveals 80 per cent, which is very little, if any, lower than is normal for the average American woman. Erythrocytes are normal in size and shape and show no nucleated corpuscles. A study of the white cells shows no increase of either large or small lymphocytes. Polyneuclear neutrophils are normal in number but the nuclei of these contain some peculiar granules which take the same color as the chromatin but stain more diffusely; they have been present in several specimens of blood, one of which was taken as early as twelve days after operation. The eosinophiles are present in increased numbers, constituting about 10 per cent of the total leucocytes; they are all of the polyneuclear variety. A careful examination fails to reveal the presence of any myelocytes, nor does the blood now show any signs of leucemia.

The American Academy of Medicine.—The new officers of the American Academy of Medicine, who were elected at its recent meeting at St. Paul, are: President, V. C. Vaughn, Ann Arbor, Mich. Vice-Presidents—L. A. Taylor, Wheelersburg, Ohio; W. A. N. Dorland, Philadelphia; H. T. Ritchie, St. Paul; M. Bert Ellis, Los Angeles. Secretary, Charles McIntire, Easton, Penn., re-elected for the twelfth term; Assistant Secretary, A. R. Crain, Columbia, Penn., also re-elected.

The Diagnostic Value of Blood Examinations in Septicemia.

By J. C. DA COSTA, JR., M.D.,

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ASSISTANT DEMONSTRATOR OF CLINICAL MEDICINE IN THE JEFFERSON MEDICAL COLLEGE; HEMATOLOGIST TO THE GERMAN HOSPITAL, ETC.

Read, by Invitation, before the Camden, N. J., Medical and Surgical Society, April 2, 1901.

HEMATOLOGICALLY speaking, the term sepsis may be used in a broad sense to include all those morbid conditions which are due to the presence in the circulating blood of septic bacteria, or of their toxins, namely,—*general septicemia*, *sapremia*, and *pyemia*. The effects upon the blood are similar in all these conditions, and, therefore, they may be discussed under the same heading. Just as severe effects upon the blood may be produced by an apparently trivial infected wound of the hand as by an intense pyemia with widespread metastatic abscesses, for these changes depend rather upon the virulence of the infection and the reaction which it provokes in the patient's system than upon the characteristics of the exciting lesion and the specific nature of the offending micro-organisms. Clinically, the blood changes about to be described may be found in association with such lesions as infected wounds, osteomyelitis, malignant endocarditis, puerperal fever, septic arthritis and many other conditions for the production of which various septic bacteria are held responsible.

There are few conditions, apart from the diseases of the blood, pure and simple, in which the blood report is of more practical utility, for, although, it can not be claimed that the blood changes furnish specific information, as they do in the leukemias, for example, they constitute, singly and in the aggregate, a group of clinical signs quite as suggestive as other more familiar manifestations, by the aid of which the condition in question is generally recognized. The traditional symptoms

of sepsis are not infrequently either masked, or modified, or absent, in some instances, in event of which the physician, embarrassed in his diagnosis, must look for other physical signs to enable him to fix the identity of the patient's illness. Who, for instance, has not encountered atypical clinical pictures suggestive at once of typhoid fever, malarial fever, and sepsis, without being able, for some days at any rate, to identify the real cause of the symptom? It is in just such cases that the blood examination often proves of signal value in furnishing the tangible clew to the situation—not in every case, by any means, but certainly in a sufficiently large proportion to make the procedure worth while trying wherever a doubt exists. Let me emphasize the fact, that I am not overestimating the importance of the blood examination in comparison with other well-known clinical signs found in septic conditions, for the former can never be substituted for the latter. But it does not seem too radical to state that neglect of a careful hematological inquiry in doubtful cases is as inexcusable a diagnostic omission as is failure to examine the urine in suspected nephritis, or the sputum in suspected pulmonary tuberculosis.

ALTERATIONS IN THE BLOOD.

Fibrin. — The amount of fibrin is often appreciably increased in cases which react vigorously against the infection, this increase being especially well-marked during the early stages of illness. A decrease in the density of the fibrin network is, however, commonly found in patients with a pronounced anemia, and in those individuals whose powers of vital resistance are so overwhelmed by the intensity of the infection that they succumb without reacting against the poison.

Serum Test. — Thus far, the serum test has given no reliable information in the diagnosis of this class of diseases, although several of the French clinicians recently claimed to have observed typical clumping of bouillon cultures of streptococci with the blood-serum of patients suffering with streptococcus infections, such as infected wounds, general sepsis, puerperal fever, and erysipelas. Evidence has also been brought forward to demonstrate that serum from patients suffering from colon bacillus infections agglutinates broth cul-

tures of this organism. This reaction, should it occur, is by no means conclusive, for it will be recalled that many races of the colon bacillus tend to clump spontaneously, while others are clumped by normal blood-serum.

If a test-tube containing blood-serum from a patient with a pneumococcus septicemia is inoculated with a pure growth of the pneumococcus, it will be found that after twenty-four hours' incubation at body temperature, the serum in the tube still remains free from turbidity, and shows simply a slight sediment, which, if examined microscopically, is found to be composed of non-capsulated pneumococci, glued together in tenacious masses, or strung out in trailing, serpentine designs. Pneumococci grown in *normal* blood-serum rapidly clouds the latter, and develops a new growth, consisting of typically encapsulated, isolated germs. A great number of Continental writers who have applied this test clinically regard it of value in the recognition of obscure pneumococcus infections, but its clinical value must still be regarded as questionable.

Bacteriological Examination.—Unfortunately, in the majority of instances attempts to demonstrate bacteria in the blood of the patient during life are unsuccessful, since general bacterial invasion of the circulation is a comparatively rare accident. In a review of the literature which I have recently made it appears that there are on record 285 cases in which it seems reasonable to presume that examinations of the blood for bacteria have been made by dependable methods. Of these cases, positive results were obtained in 98, while the remaining 187 remained negative—a percentage of 34.3 for the former. Staphylococci, streptococci and pneumococci are the organisms most commonly met with in successful cultures.

The discovery of bacteria in the blood is sometimes a sign of the utmost clinical value in obscure cases, although, on the contrary, failure to find them by no means excludes the existence of a septic process, nor does it necessarily indicate a favorable prognosis. Experience has taught that the detection of pyogenic cocci in the circulating blood is practically equivalent to a signing of the patient's death-warrant, so that from a prognostic point of view such a finding means much.

It need not be remarked that a bacteriological examination of the blood should be undertaken only by a trained worker, who has adequate laboratory facilities at his command, in order to secure accurate results. The procedure is an elaborate one compared to other methods of blood investigation, and is resorted to only in occasional instances.

Hemoglobin and Red Corpuscles. — Anemia, of a grade proportionate to the intensity of the infection, is the rule in septic cases, regardless of the specific character of the infecting principle. In very acute cases the loss of hemoglobin and corpuscles may be so excessively rapid that their decline may be traced from day to day, and even from one morning to the following night, in some instances. This rapidly-developing form of anemia is associated especially with fulminant cases of puerperal septicemia, in which condition the hemoglobin and red corpuscles may be reduced in a short time to one-fifth the normal amount.

In less intense infections the development of the anemia is more gradual and the blood impoverishment less striking, the hemoglobin not falling below 40 or 50 per cent of normal, and the corpuscles not being diminished to less than 2,500,000 to 3,500,000 to the cubic millimeter.

In my examination of 37 cases of the various form of septicemia and pyemia the average hemoglobin estimate was 48.6 per cent, ranging in the individual case from a maximum of 85 per cent to a minimum of 19 per cent. The number of red corpuscles per cubic millimeter averaged in these counts 3,369,232, the highest estimate being 5,390,000, and the lowest 1,093,000.

In very severe cases, reddish discoloration of the blood-serum, indicating hemoglobinemia, may sometimes be observed.

White Corpuscles. — Leucocytosis is always present in well-marked cases in which the infection occurs in a patient whose powers of resistance are sufficiently strong to react against the systemic poison of the disease. In trifling infections, not sufficiently marked to provoke activity of the leucocyte-making organs, and in lethal cases, in which the system is so overpowered that leucocyte-production is stifled, not only

is the number of white cells not increased, but occasionally reduced below the normal standard. Thus, in the 37 cases just mentioned, leucocytosis was found in 26, or a trifle more than 70 per cent, while in 4 cases, or about 10 per cent, the number of cells was distinctly subnormal. The correspondence between the blood-count and the clinical symptoms in these cases was invariably maintained, for all the cases not showing a leucocyte gain proved to be either very mild or very severe infections. The highest estimate in the series was 41,600 leucocytes per cubic millimeter (or about six times the normal number), the lowest 2,000, and the average 13,852.

Blood Plaques. — The plaques do not appear to exhibit any characteristic behavior, being sometimes apparently increased in number, and again decreased.

SUMMARY.

To recapitulate, the blood changes of most importance in the diagnosis of septic diseases may be summarized as follows:

- (a) Marked increase in fibrin, especially in the early stages of the disease.
- (b) The presence of bacteria in the circulating blood in occasional instances, always those of grave nature.
- (c) Anemia, the degree of which closely corresponds to the severity of the infection.
- (d) Leucocytosis, except in very mild and very intense infections.

DIAGNOSTIC VALUE OF THE BLOOD CHANGES.

The query, What practical diagnostic aid can be derived from the changes above enumerated? still remains unanswered. As previously remarked, the blood-picture of sepsis can in no sense be regarded as specific, but this fact does not of necessity annul its clinical pertinence, nor minimize its importance, for if employed as a basis for diagnosis by exclusion, its significance at once becomes patent. For example, certain irregular types of sepsis, of typhoid and malarial fevers, and of acute miliary tuberculosis exhibit such uncharacteristic

and vague symptoms as to puzzle even the skilled clinician. Should the diagnosis lie between sepsis, typhoid and malaria, the presence of a leucocytosis and of a fibrin increase is sufficient almost certainly to exclude the latter two fevers, 'since neither of these signs occur in typhoid and malaria, except in the event of some obvious complication. If neither a leucocytosis nor an increased quantity of fibrin are found, a bacteriological examination of the blood may prove conclusive, and thus give the key to the situation. The early development of a decided anemia, which attains a high degree with unusual rapidity, is also very suggestive of sepsis rather than of typhoid or malaria, since in the latter the accompanying anemia, although it may be striking, is not observed until late in the course of the disease. It may also be added that the presence of a positive Widal reaction (clumping of the Eberth bacillus by the blood-serum of a typhoid patient) is diagnostic of typhoid, just as the detection of the malarial parasite is proof positive of the presence of malarial fever.

If the patient's symptoms are suggestive of either sepsis or acute miliary tuberculosis, but are distinctive of neither, the presence of a leucocytosis and a fibrin increase point to the former, as in tuberculosis the number of white cells does not exceed the maximum normal standard, and the amount of fibrin is not increased. Should leucocytosis be absent, it is apparent that the blood examination is of little or no aid in differentiating these two conditions, unless, of course, successful results from blood culturing can be obtained.

In conclusion, allow me urge the more routine employment of blood examinations as a means of clearing up diagnostic fogs, not only in the class of diseases with which this paper deals, but in many other pathological states the nature of which is more or less obscure. No medical man underates the value of an urinary examination, compared with which the blood examination is equally important, for in the past few years numberless practical workers in hematology have conclusively demonstrated the fact that there are few diseases, medical or surgical, in which a study of the blood fails to throw light, while, in a few instances, it furnishes at once a specific diagnosis.

Some Sociological Problems in Relation to Marriage, Crime, Insanity, Etc.

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EX-PRESIDENT ATLANTA SOCIETY OF MEDICINE; MEMBER AMERICAN MEDICAL ASSOCIATION, SOUTHERN SURGICAL AND GYNECOLOGICAL, AND STATE MEDICAL SOCIETY, ETC.; CHAIRMAN TRI-STATE AND STATE SOCIOLOGICAL COMMITTEES.

Read before the Medical Association of Georgia, April, 1901.

THE medical profession is an integral part of society which it builds up or tears down in proportion as it rises above or falls below the moral standard of each community or state.

The responsibilities of the profession are in proportion to its enlightenment and opportunities. We can not, if we would, free ourselves from responsibility and obligation to humanity so long as we practice conscientiously the profession of medicine.

While in a strict literal sense we may not be "Our brother's keeper," yet, in a broad conception, we are. The medical profession is supposed to understand the normal and be able to recognize the abnormal in the mental and physical of mankind. In a proper understanding of the normal and abnormal we must form some conception of cause and effect. The abnormal is but the effect of a cause operating on the normal. Disease is but a deviation from the normal mentally, morally or physically, and the resultant of some antecedent cause. In mankind cause and effect reach the acme of perfection or the lowest depth of degredation. This is true because of higher endowments. The higher in the scale of life the greater the capabilities for good or evil and the greater the resultant effect of existing causes. The standard, physically, morally and intellectually is elevated or degraded by the resultant effects of heredity and acquirement. The transmitted and acquired

characteristics of mankind tend to uplift or tear down according to well-recognized principles. The salvation of the world, physically, morally and intellectually, depends on three great causes:—First, Heredity; second, Training; third, Environment.

The sooner we, as a profession, recognize the full effect of these great factors in the development of the human race and proclaim them to the general public at every opportunity, the sooner will we reach that acme of perfection designed in the Creation of Mankind.

We are not dealing with this subject from a spiritual or religious standpoint, but from a purely rational, scientific, broad basis, solely with a view of benefitting mankind.

The achievements of the past century in sanitary science with the antiseptic and aseptic methods of preventing disease have marked an important era in the world's history.

These achievements have been attained through the physical realm with great benefit to mankind.

In the Twentieth Century it is to be hoped we will enter the moral and mental realm with even greater benefit to humanity. As the moral and mental are higher than the physical, the opportunities for benefit to humanity are increased in the same proportion.

The mental and moral preside over the physical, lifting to higher planes of usefulness or degrading to the level, or even lower than the animal. Purify the moral and mental and then the physical becomes pure. Corrupt the mental and moral natures and the physical becomes diseased. The physical nature being lower can not overcome and predominate to elevate the degraded moral nature.

The moral and mental natures uplift or degrade the physical at will, according as they are pure or impure.

"Ye shall know a tree by its fruits,—shall ye gather figs from thistles?" "As ye sow so shall ye reap—the sins of the father shall be visited even to the third and fourth generation," all speak solemn, truthful, burning, everlasting truths which we can not evade, be we Jew or Gentile, infidel or agnostic, saint or sinner.

There are certain fixed laws that govern our existence and by them we must rise or fall.

We can not transmit that which we do not possess in substance or possibilities. A child is but the offshoot of the combined natures of father and mother. Its fate is determined by three factors—heredity, training and environment. Heredity is the first primal factor in the development of the human race, its imperfections may, in a measure, be eliminated by proper training and environment.

It should be the inalienable right of every child to be well born, as they are brought into the world without their consent or knowledge.

The human being suffering with disease brought about by sinful indulgences has no moral right to bring children into the world to suffer for their sins.

I will even carry this principle farther and say, those suffering with hereditary diseases that are a menace to society, transmitted to them, should not bring children into the world to suffer, even though they may have the moral right to do so.

Here it is, discrimination, and judgment should be used so as to do justice to the individual and yet protect the unborn child and future generations.

Because our parents have sinned and transgressed Nature's laws, does not justify us in so doing.

Here I wish to present a broad principle that should actuate all mankind from a sociological standpoint:

No person has any moral right to indulge simply for pleasure or self-gratification in anything not essential to life that will transmit diseased tendencies, mental, moral or physical, to their offspring.

Another broad principle that should govern mankind is—never to engage in anything nor influence any human being to engage in anything that will lower the standard of mankind, mentally, morally or physically.

Some will say this is an infringement on personal rights and liberty. Personal liberty does not constitute personal right. Personal liberty may be right or wrong, just or unjust. The father has the liberty to chastise his own child, which may

be just or unjust; the criminal has the liberty to marry and propagate his kind, which is unjust.

The insane, epileptic, tuberculous have the same liberty and, perhaps, some personal right to get married when those diseases are due to heredity.

Persons suffering with insanity, tuberculosis, dipsomania, and venereal diseases brought on by dissipation, should have neither the liberty nor the right to get married and propagate their kind. What moral right has any man or woman to live a life of depravity, producing disease and degradation of their own body and then bring children into the world doomed to disease and suffering, before they are born.

Man is a free moral agent, has the liberty to choose good or evil, but certainly has no moral right to choose evil.

No man lives unto himself alone, his deeds live after him in a two-fold sense:

1. By its impress mentally on his associates.
2. By its impress upon his offspring, mentally and physically, in accordance to the laws of heredity, environment and training.

If his sins, vices and degeneration were confined to himself, then he might have some personal right to indulge in them.

A man transmits that which he possesses, bearing fruit after his own kind.

After a careful survey of this question we are forced to conclude that children are what their parents make them by heredity, training and environment. If we desire our children to be robust, healthy children, physically, morally and mentally, we must be so ourselves. The boy can not smoke cigarettes or chew tobacco, drink whisky, swear, act immoral and sow his wild oats without reaping as he has sown.

You may reform the boy, reclaim the fallen girl, but you can not make them over, the seeds of vice have been sown, they can never be made as pure as they once were, and as if they had not sinned. Such wayward ones have prevented their full development, crippled their usefulness and, even before they are grown, render themselves unfit for paternity, else they

propagate a degenerated race in proportion to effects of their vices.

The farmer rejects the shriveled grain, the stock raiser selects for propagation the best developed stock, not only physically but in traits and characteristics, the florist rejects the imperfect and selects only the pure for cultivation.

Shriveled grain sown in poor soil provided with improper nourishment, develops a degenerated grain. Good stock improperly fed, trained to bad habits, degenerates, and by a law of Nature, soon runs out or is destroyed.

But man, the masterpiece of creation, is allowed all liberty, just and unjust, he indulges in vices of no benefit but of positive harm to himself and propagates a degenerated race, a curse to civilization, a burden to honest people, and this is called liberty and personal rights in an enlightened civilization.

God deliver me from such personal rights and liberty.

When a human being so far forgets his personal obligations to himself, humanity, the state and his own offspring as to habitually indulge in crime, vice and immorality, he should be controlled by legal measures.

What moral or personal right has such a man to marry?

No minister of the gospel or officer of the state should be allowed to perpetrate such an outrage on humanity as to solemnize such marriages.

As an example and object lesson we quote the following: "The Ben Ismael Tribe," by McCollough.¹

"He discovered and identified 1,750 descendants of this man living in Kentucky in 1790, who had been criminals and paupers, among whom 121 were prostitutes. In six generations 75 per cent of the cases treated in the City Hospital, Indianapolis, were of this man's offspring."

"Prof. Pelman," of Bonn University, discovered and identified 709 descendants of Frau Ada Jurke, a notorious drunkard, who was born in 1740, and died in 1800. Of these, seven

¹Bower.—*Journal of the American Medical Association*.

²Boies.—"Prisoner and Pauper." p. 76. [G. P. Putnam & Sons 1893.

have been convicted of murder, 76 of other crimes, 144 were professional beggars, 61 lived on charity and 181 were prostitutes. This family cost the German government for maintenance, cost of courts, almshouses and prisons, one and a quarter million dollars."

If this woman had not been allowed to marry, been rendered sterile or properly confined, so as not to propagate her kind, it would have been a blessing to her, prevented untold suffering, disgrace and degeneration.

It is certainly the plain moral duty of a state or community to protect itself, to suppress or prevent vice, to care for and protect innocent, helpless victims from being born into degeneration, vice and misery by moral degenerates.

When a man or woman assumes the right to degrade themselves by wilfully indulging in vice and immorality, sinning away their own birthright, then, in the name of Liberty, Right and Justice, I protest against their propogation. In the name of that high honor that should characterize maternal and paternal instinct, I protest!

In the name and behalf of countless victims doomed to degeneration and misery before they are born, I protest!

When a man or woman wilfully abuses the principle of free moral agency the result should fall upon themselves and not others. Such is not a curtailment of their rights and privileges, but a just recompense for their deeds. As soon as they transgress the laws of Nature or morality, they relinquish in the same degree their rights to liberty and freedom.

Liberty may be a blessing or a curse. Liberty to the Mormon means the right to more wives, to the inebriate the right to more whisky, to the profane more profanity, to the criminal more crime, to the degenerate the right to indulge in sin and propagate his kind.

That such liberty constitutes right and justice, to the sane reasoning mind, nothing could be more absurd.

We are led to ask the question, who is free and entitled to that inalienable right of absolute liberty?

I answer, he who is born free and kept pure, physically, mentally and morally. If the origin of life be perverted, then

contaminated from the cradle to the grave, how can we conscientiously lay just claim to liberty and freedom.

Absolute liberty and freedom means absolute purity.

Every effect must have an antecedant cause.—Virtue, manhood and nobility of character are not the result of chance or luck, neither is sin and degradation, both are but just recompense of deeds done in the body.

In the reformation of the world, improvement of the race and the uplifting of humanity, we must get at the primal factors or causes that build up or tear down.

Asylums for the inebriates, reformatories for youthful criminals, homes for fallen women, are to be commended, they do a good work and should be liberally supported, but pause and meditate for a moment, they are but dealing with the effects of antecedent causes. Reform the drinker and change the customs of the society and there will be no inebriates. Give proper paternity and maternity, with suitable training and environment, there will be no youthful criminals.

Establish the same moral standard for both men and women with a high sense of honor, then there will be no fallen women.

It is easier to control crime and immorality in its incipency than after the floodgates are open. A boy does not develop into a man, a girl into a woman, a shrub into a full-grown tree, at one bound; neither is a drunkard, a criminal or a thief developed in a day. We punish the drunkard, the criminal and the thief, which at best is but suppression of the effect of an antecedant cause.

As honest physicians we must seek the truth as revealed by scientific investigation and not ignore lessons taught by practical experience and close observation.

Can any physician as a student of Nature deny the evil effect on the offspring of the habitual drunkard, the inveterate user of cigarettes, of the drug habit, or he who constantly indulges in vice and immorality?

None of these things are essential to the life of a well person, then if they tend to degenerate his offspring, what moral right has a man to indulge in them?

Can any man deny that these are some of the primal factors in the development of the race?

Purity from purity develops, sin from sin grows, regardless of our views and theories, likes or dislikes.

To try to brush aside lightly these questions and call the writer a fanatic, is unmanly and unworthy the high calling of the profession. If these arguments are fallacies, meet them with sound reasoning and help us to arrive at the truth on a more scientific basis. It is certainly selfevident if we desire a pure, noble, well-developed race, we must not only suppress vice, but eliminate its cause in high as well as low estate, dealing with it in its incipency, applying the old adage—"An ounce of prevention is worth a pound of cure."

In the name of humanity and those nobler aspirations that tend to higher planes of usefulness, I urge upon the medical profession an advance stand in the prevention of disease, not only of the physical but of the mental and moral as well.

We desire this Association to appoint a committee of three members to act in conjunction with the Committee from the Tri-State Medical Society for the study of sociological questions, with a view of securing unity of action, not only of the profession in Georgia, but Alabama and Tennessee also.

This Committee with the influence of the medical profession of three states back of them can be a great factor for good in developing the human race. After careful study, with information gained from the profession and discussions at our various societies, the Committee hopes to be instrumental in securing legislation on proper subjects and help to educate the public, with the aid of the profession, on lines that will prevent many diseases and much suffering.

So far as the work of the Committee from the Tri-State Medical Society has developed, it is our desire to take up:—

1. The subject of marriage and propagation of criminals.

In this paper and discussion of these subjects I speak only my individual views and not authoritatively from the Committee. *I am firmly convinced as a principle of right and justice, habitual and confirmed criminals, should not be allowed to marry nor propagate their kind.*

They are a curse to humanity, a menace to society, a traitor

to the state and their offspring doomed to degradation before they are born and after birth a burden to society, to be cared for, maintained and controlled by the state.

To render such sterile by human methods would be an act of charity to the individual and a blessing to humanity. This would prevent the development of a host of criminals and retard others from criminal acts.

By his crimes he has forfeited all moral right to marriage and paternity and is only entitled to protection that he may eke out his own existence. Even if he was impelled to the commission of crime to a great extent by heredity and anatomical malformations, it is only the greater reason for sterility.

2. The marriage of the idiotic, insane, epileptic, tuberculous, dipsomaniac, and those with venereal diseases, will be considered and, if possible, certain restrictions as to marriage will be proposed.

Many a marriage is but giving license and permission for propagation of diseased, crippled, degenerate children, doomed to misery and suffering worse than death.

The regulation and restriction of these several conditions will require discrimination and judgment, which can best be attained by a committee working regularly and harmoniously along these lines.

We hope to get our legal brethren interested in these questions and that they will give us valuable aid in working out these problems.

3. The age of consent in the State of Georgia:—What shall we say? My blood almost boils with indignation and words fail to express my opinion of a legislature that would fail to protect the innocent girl from the snare of the seducer.

Its a disgrace to the fair name of Georgia, an ignominious slander on motherhood and a crime against childhood.

Can man possessed of the proper conceptions of paternity with the honor and chivalry of true manhood fail to protect his daughter of 12, 14 or even 16 years from the hand of him who would rob her of that which is even dearer to her than life itself?

No man should be counted worthy of the suffrages of the

people that would not use all honorable means to protect our girls, and the medical profession should use their influence to prevent any such entering our legislative halls.

4. *Child Labor*.—It is a question of no little importance and especially so at the present time when cotton factories are being built to rapidly within the confines of our State.

To the casual observer it is evident we need some legislation along the line of protection of children that now work in these factories.

Taken at such a tender age, compelled to work ten to eleven hours per day in bad air, often with improper food and clothing, without education or proper moral training, and what can we hope for?

In many instances the money they earn by sacrificing health, happiness and future prospects is squandered by the father for his own gratification and of no benefit to his family. Shall we stand idly by with folded hands and not make an effort to protect these helpless children and help lift the yoke of bondage from their young shoulders and give them a reasonable chance in life?

Time forbids further enumeration. These are only a few of the many things that affect the development of the race, which we hope to consider later. In conclusion, allow me to state, what I have said is not in a spirit of criticism or fault-finding, but an honest expression of my views, given with a hope of benefiting humanity.

[308-310 ENG. AMER. BLDG.]

Total Abstainers a Preferred Insurance Risk.—One of the largest of American insurance companies has decided to make total abstainers from alcoholic drinks a preferred class in the placing of life insurance, and to take them at a lower premium rate than that given those who are partakers of stimulants. Other things being equal the total abstainer is a far better risk than his convivial brother, and should certainly have consideration for that fact in the cost of his insurance. Besides something is due him for the fun he has missed.

Vaccination.

By JOSEPH GRINDON, M D.

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, February 27, 1901.

ONE might imagine that in this, the first year of the Twentieth Century, there would be little excuse for writing a paper on vaccination. Jenner's discovery is more than a hundred years old and its value was acknowledged from the first by all the best minds of the profession. True, testimony to its value is constantly accumulating and some new facts concerning it—symptomatic, pathologic and histologic, have from time to time come to light, but I shall have nothing to offer to-night which is not already accessible to you all.

What then is my excuse for choosing this subject? First, that the repetition of the best-known truths is not useless, and that it is well to be occasionally reminded of the reasons for the faith that is in us.

Second, that among that larger audience which I may hope to reach through you, there are still some who do not appreciate the value of this, among the greatest blessings vouchsafed to humanity. Proof of this assertion is easily furnished by the fact that during this and last winter, small-pox has been rife throughout the United States, whereas a century ago it seemed probable that it would soon be stamped out from the face of the civilized world. Every pitted face is a reproach to civilization.

Third, because even among medical men the science and art of vaccination are but ill understood. Pus infections and other spurious inoculations still occasionally pass for vaccinations, leaving their recipients worse off than before, because in fancied and unreal security. Even true vaccinations are in large proportions imperfect and insufficient, and thus undeserved doubt is thrown upon the efficacy of the procedure. The records of all small-pox hospitals show a certain propor-

tion of patients bearing one or more vaccine scars. This should not be, and would not be, did all vaccinators thoroughly understand their business.

The course of vaccinia in the human subject presents a close parallel to that of variola, which is not surprising when we remember that in fact it *is* variola, modified by its passage through the organism of the cow.

Usually at the close of the third day after vaccination a slight elevation of the abraded surface may be seen; this is better marked the next day. By the fifth day the epidermis begins to be pushed up by a flacid accumulation beneath, and on the sixth day a distinct, multilocular, bluish-white vesicle has been formed, with raised edges and a saucer-like central depression. The vesicle continues to spread at its periphery for two days more, when, that is on the eighth day, a specific inflammation, marked by a red circumferential area, the areola, makes its appearance. The vesicle and areola now present the appearance beautifully described by Jenner as "the pearl on the rose." It is the formation of this areola which signalizes the event of systemic intoxication. It is the index of immunity. From that moment, and not before, is the individual vaccinated. For two days more and until the tenth day both vesicle and areola enlarge, the latter may now be two inches or more in width, and is of a dusky hue. The arm is hot, swollen and tender; the inflammation has extended to the neighboring subcutaneous connective tissue. Contiguous lymphatic glands may be implicated; there is more or less systemic disturbance, fever, anorexia, restlessness, etc.

After the tenth or eleventh day, the pustule, for such it has now become, begins to dry in the center, the areola grows narrower and the local and constitutional symptoms begin to abate. By the fourteenth or fifteenth day a dark mahogany colored scab has formed which falls off between the seventeenth and twenty-fifth day.

The course of events may vary somewhat from what has just been stated; the variation may be either in the way of *acceleration*, as when long-humanized virus is used, or in the way of *retardation*, as is likely to be the case with bovine virus.

This retardation may occur, (1) during incubation; this may occur with any dry lymph, but more particularly the bovine, owing to its insolubility. (2) during dessication and desquamation, the scab, in fact, occasionally remains attached for many weeks.

The resulting cicatrix is at first vascular but soon becomes white, and should present a foveated and somewhat radiated appearance.

The test for vaccination which has received the name of Bryce consists in re-inserting the virus on the fourth, fifth or sixth day after primary vaccination, when, if the first have been successful, the vesicles of the second insertion are hurried forward so that all come to maturity on the same day. The vesicles and areola of the second insertion are much smaller than those of the first. If there be no acceleration of the second lot, the first is supposed to have failed, and then the second is to be regarded as the initial vaccination and to be tested by a third, and so on.

It is important that one should be informed as to the existence and clinical characters of the several forms of spurious vaccinia recognized and described. It is unnecessary to dwell upon the possible sinister effects of an error of diagnosis here, through which an individual may suppose himself protected when in reality his susceptibility to small-pox is as great as ever. The various forms are:

1. Red tubercles, the size of peas, which afterward suppurate. This form was very common in St. Louis some years ago and has been observed by me within the last year. The little tumors may persist for weeks.

2. A non umbilicated, but acuminate or conoidal vesicle, commencing with much irritation and itching, containing straw-colored or opaque, instead of clear, lymph. The areola is completed on the fifth or sixth day, beginning to decline on the eighth day and the scab falls off by the tenth.

3. Instead of the usual vesicle, a bleb sometimes forms, followed by troublesome ulceration.

4. A crop of herpetic vesicles, preceded by shivering and accompanied by intolerable itching and enlargement of axil-

lary glands. The bursting of the vesicles is followed by an eczematous inflammation.

5. Occasionally vesicles which have apparently run a normal course up to the eighth or tenth day, suddenly rupture and are followed by ulceration which extends both in depth and peripherally; three such cases I observed recently. These cause much local and constitutional disturbance. Of course, any of these events calls for revaccination.

Among the possible complications are inflammation and suppuration of neighboring and even of distant lymphatic ganglia. My personal opinion is that this is always due to a filthy vaccination.

Various cutaneous manifestations may accompany the constitutional disturbance incident to vaccinia. The most common of these is a roseola identical in appearance with that at times accompanying dentition. Papular eruptions, urticaria, erythema multiforme, purpura and zoster have also been recorded. Vesicular and bullous eruptions may occur, at times exactly copying the vesicular and bullous types of dermatitis herpetiformis. A number of such cases were reported to the American Dermatological Association at its meeting in 1900 by Drs. Bowen, of Boston; Pusey, of Chicago; Dyer, of New Orleans; myself, and others. In my two cases the eruption appeared—as seemed the rule—about four weeks after vaccination. Large tense blebs arranged in groups and circles were scattered over the general body surface in a symmetrical fashion. Some of the Boston cases had existed for a year or more when reported. Still graver are the cases reported by Hutchinson and Stokes under the name of vaccinia gangrenosa. There appeared purpuric spots which later became gangrenous. Fatalities have been known.

Serious as these well-established cases, are they are so few as to sink into insignificance when compared to the immense number benefitted by vaccination.

Vaccination may determine the appearance of eczema in those predisposed to it, or aggravate it when it already exists. For this reason it may be well to defer the operation in some cases, provided, of course, that there has been no exposure to small-pox.

When one of the continued fevers makes it appearance before the eighth day of vaccination, that is, before the appearance of the areola, it will sometimes happen that the progress of the vaccinia will be arrested until the subsidence of the more important disease, when it will take up the thread of its tale where it was dropped. At other times the two diseases will go on together. Of the relations of this sort existing between vaccinia and variola I shall speak later.

Revaccination is second in importance only to primary vaccination. Its course departs more or less from that of vaccination. The vesicles may reach their acme by the fifth, fourth or third day, sometimes the process does not go beyond papulation.

The question is frequently asked, how often should one be revaccinated? We may first observe that it seems to be a fact that any vaccinal impress may wear out in time. In *what* time, depends upon the nature of the first vaccination, the time of life at which it was done, and individual peculiarity.

I obtained a record of the date of last vaccination in 555 cases of small-pox observed by myself, with the following result:

	CASES.	DEATHS	PER CENT.
Never vaccinated.....	314	146	46.5
Vaccinated over 15 years.....	123	29	23.5
Vaccinated between 10 and 15 years.	23	6	26.0
Vaccinated between 5 and 10 years.	27	5	18.5
Vaccinated within 5 years.....	68	11	16.0
	<hr/>	<hr/>	<hr/>
Totals.....	555	197	35.7

This table shows not only the protecting influence of vaccination but its power in mitigating the severity of the disease.

As to the time of life, puberty and the changes incident thereto lessen the potency of the vaccinal impress received at an earlier date. For that reason vaccination should be again resorted to soon after.

The following table, taken from Corry, shows the gradual effacement of the vaccinal impress, at the present day, and

also how, without vaccination, small-pox is eminently a disease of early life as are the other exanthemas, and for the same reason.

Percentages of Death from Small-pox at Various Ages.

	Under					Over
	5	5-20	20-40	40-60	60-80	80
Pre vaccination times....	83.15	15.79	1.16	0	0	0
Present.....	3.07	16.34	58.41	18.61	3.24	.32

Trousseau's rule, that one should be vaccinated every five years, while probably an excess of precaution, is a good one. At all events, one should revaccinate whenever there is danger of infection.

Superiority of Bovine Virus.—Now, as to the kind of virus one should use. There are certain facts which should guide us in our choice. Virus many removes distant from its fountain head, that is which has been often transmitted since first taken from the cow, has lost much of its prophylactic power.

Four years after Jenner had given his discovery to the world, a committee of the House of Commons, appointed for the purpose, could find only two cases of post-vaccinal small-pox. In Copenhagen, at the time, a city of 100,000 souls, where vaccination was rigidly enforced, not a single fatal case of small-pox occurred during the thirteen years ending with 1823. At Annspach, Bavaria, a place of 300,000 inhabitants, not a fatal case occurred during the nine years ending with 1818. Of over 500,000 vaccinated in France between 1804 and 1813, only seven are known to have taken small-pox.

Soon, however, it began to be apparent that the beneficent influence of the discovery was on the wane. In France, between 1819 and 1835, there were 5,467 cases of post-vaccinal small-pox, of which 51 were fatal. In Copenhagen, there were several epidemics between 1825 and 1835, in which there were 3,093 post-vaccinal cases and 66 deaths.

There is, however, a place for the use of humanized virus, namely, in cases showing relative insusceptibility to vaccinia. Facts seem to show that failures are rarer when humanized virus

is used than when bovine. Thus Corry reports in his own practice failures in 311 first vaccinations with bovine and one in 1,140 with humanized virus, using in both instances the fresh unstored lymph, that is, arm to arm or calf to arm.

The formula of insusceptibility is expressed as follows: Let X represent the number of primary vaccinations yielding one failure. Now, if the probability of success was the same for a second or a third vaccination as for the first the ratio of failures for third attempts would be 1 to X^3 . The fifth and sixth volumes of "Reports of the New York State Board of Health," however, show that failures are more frequent than 1 to X^3 . That is, that one in whom a vaccination has failed is less likely to have a success than one never vaccinated, the ratio of failure being $\frac{2X}{9}$. Say that the ratio of failure for first attempt is 1 to 300, then $\frac{2(27,000,000)}{9} = 6,000,000$.

Selection of the Subject.—Cutaneous and intestinal affections contraindicate vaccination; chronic diseases—such as syphilis and struma—offer no impediment, neither does pregnancy. Of course, in the face of exposure to small-pox all ordinary rules should be set aside and the individual rendered as nearly immune as possible with the least loss of time.

The best age at which to vaccinate is three months, that is before the commencement of the troubles incident to dentition. Of course, when small-pox prevails, the child should be vaccinated at birth. I have seen a child sicken with small-pox on the tenth day of its life; the mother was well; it must have inhaled the germ almost with the first lung-full of air. This may serve to impress the moral of early vaccination.

The question may be asked: Is there any use in vaccinating persons who have been exposed to small-pox for a day or more? I desire to give an answer in no uncertain voice. Yes, of course, and without the loss of a single precious moment. First, because you can not tell when the germ enters; one may resist the infection to-day and receive it to-morrow. Second, because even though one be already infected, it may still be in time to save health, or if not that, perhaps life. The average duration of incubation of small-pox may be called

thirteen days. The areola of vaccination marking the reception of the systemic impress occurs on the eighth or ninth day. This gives us three days or so in which to work out the salvation of the threatened individual. If not in time to prevent the disease altogether, it may be in time to mitigate it.

Marson states the matter as follows: Suppose an unvaccinated person to inhale the germ of variola on a Monday, if he be vaccinated as late as the following Wednesday the vaccination will be in time to prevent small-pox being developed, if it be put off until Thursday the small-pox will appear, but will be modified, if the vaccination be delayed until Friday, it will be of no use, it will not have had time to reach the stage of areola, the index of safety, before the illness of small-pox begins.

The Technique and Use of Hypodermoclysis.

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HYPODERMOCLYSIS is the logical legacy of the mediate or immediate transfusion of human blood.

This latter operation has been a recognized procedure since 1824, although it was certainly known, but not extensively employed, for several hundred years prior to that date. In 1492, a year memorable in the annals of discovery, transfusion is said to have been made in the case of Pope Innocent VIII, but the purposes for which it was used in this particular instance are not recorded.

ORIGIN AND EVOLUTION.

Before the Eighteenth Century, transfusion was recommended as a means of treatment in various diseased states, or with the extravagant hope of imparting new life and vigor to the old and decrepit. The idea of resorting to this measure

for profound hemorrhage does not seem to have been entertained; while, at a later date, its chief uses and indications have been in severe and sudden hemorrhages, especially post-partum bleeding and that following abortions, and to a limited extent, it has been employed in exhausting diseases; in all of which cases, the *raison d'être* was that it replaced, in a measure, the blood lost and supplied something for the heart to contract upon until new blood was formed.

It is unquestionable that transfusion of blood, human and animal, has saved a few lives, but it falls far short in permanent results of what was originally anticipated for it. An old theory with reference to transfusion was that the blood must come from the same species, but Brown-Séquard demonstrated that the blood of various animals could be used. However, this plan is highly objectionable on the ground of the variable size of the blood-corpuscles in different animals. Another grave general objection to transfusion is the risk of coagulation of the blood in the veins and the danger of introducing air into the circulation. Transfusion of blood has doubtless often produced a fatal result by causing thrombosis and embolism.

After Brown-Séquard's investigations, Panum proved that defibrinated blood is just as efficient as pure blood. This discovery has been productive of very important, practical and far-reaching results, inasmuch as it indicates that the *saline* elements or constituents are those which are required; hence, at the present day, an artificial saline fluid has very appropriately superseded the older method of venous and arterial transfusion.

NORMAL SALINE SOLUTIONS.

For practical purposes and clinical uses, the normal salt solution contains approximately one heaping teaspoonful of chemically pure sodium chloride to a pint of water; or to be more exact, seven grammes to a thousand cubic centimeters of water. Various formulæ have been devised and suggested for use in the operation under consideration. Only a few will require mention, as the principle underlying them is the same; namely, to supply a fluid physically and chemically resembling the serum of the blood. The following solution is simple and

eminently satisfactory for hypodermoclysis or intravenous injection :

R. Sodii chlorid.....3ss
 Sodii bicarb.....gr xv
 Aquæ destillat.....O.ij

M. Sig.—From a pint to three pints may be used. This fluid should be raised to a temperature of from 100° to 104°F.

Hayem recommends sodium hydrate, sodium chloride and sodium sulphate, with boiled filtered water, in such proportions as to make the resultant solution of a specific gravity of 1020, as an artificial blood-serum. Some physicians inject a solution consisting of boiled water and sodium phosphate. A convenient method for preparing a condensed and rather complicated normal saline solution is the following, which is a modification of Jennings' formula :

R. Sodii chlorid.....3ss
 Potassii chlorat.....
 Sodii sulphat..aa 3j
 Sodii phosphat.....gr.xl
 Sodii carbonat.....3j
 Aquæ destillat.....1.s ad 3iv

M. Sig —One part of this solution in sixty parts of distilled water for transfusion.

THE MODUS OPERANDI.

The technique and apparatus for performing hypodermoclysis are very symple. The instruments needed are few. An ordinary aspirating needle of medium size attached to four and one-half feet of rubber tubing, connected with a glass or hard rubber funnel, is all that is absolutely necessary. Everything, including the surgeon's hands, should be perfectly aseptic and sterile. After the skin is properly and carefully prepared, as would be done for any surgical operation and the disinfected funnel, tube and needle are filled with the sterilized solution, the needle should be thrust obliquely into the subcutaneous connective or areolar tissue to the depth of about two inches, the funnel being elevated to a height of three or four feet, the solution is allowed to enter the tissues by the force of

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gravity or hydrostatic pressure. During the flow of the fluid, the tissues should be kneaded, manipulated and massaged toward the heart, to promote absorption. This may be done by the operator while an assistant holds the funnel. Hypodermoclysis may be given in the thigh, the buttock, the back, the chest, and in women, in the submammary region or under the breasts. As many punctures may be made as are found necessary to inject the requisite amount of fluid.

An ordinary rubber bag or fountain syringe may be substituted for the apparatus mentioned, or an irrigating-jar with three or four tubes makes an ideal device. Hypodermoclysis may be satisfactorily performed by means of a Pravaz, large hypodermic or aspirating syringe, and in emergencies, I have attached a suitable needle by means of a few inches of tubing to a large uterine syringe, and used this improvised apparatus with entire satisfaction.

There are, indeed, many ways or means by which the ingenious surgeon could introduce the saline solution. Anyone with the slightest amount of mechanical ability can construct some sort of an instrument that will suffice. No patient should be allowed to die from the effects of hemorrhage, or from any condition to which the treatment applies, without at least a trial of the salt solution. In fact, so various and universal are its uses and indications as a restorative agent that it would be difficult to enumerate all the diversified diseases and conditions in which it is available or may be productive of doing good.

Notwithstanding its practical and flexible utility, common sense will teach that there are limitations or boundaries to the usefulness of this valuable resource. Some diseases are, *per se*, incurable, but it should be borne in mind with what frequency it is that the issue is enshrouded in doubt. In such cases, if the indications seem imperative, or even promising, give the patient the benefit of the doubt.

REPORT OF A CASE.

A few months since I used hypodermoclysis as a *dernier ressort* in a patient with whom there was a fatal termination. I expected death to ensue in spite of anything that could possi-

bly be done, yet I do not regret that this effort at resuscitation was made. This failure, it seems to me, will illustrate the powerful restorative properties and potential possibilities of the treatment when used under less adverse circumstances.

In the evening of the 10th of December last, I was hurriedly summoned by telephone to see a female patient, passed middle age, who, while preparing supper, began to suffer from sudden and alarming gastrorrhagia or hematemesis. I had successfully treated this patient on two or three occasions before for this condition, the last time over a year previous to the present attack. Every effort was made to control the gastric hemorrhage, but in spite of the persevering use of every available styptic and astringent the bleeding would recur *just as soon as the blood-pressure became raised* from the previous loss of blood.

My diagnosis was hypertrophic cirrhosis of the liver, and the gastric hemorrhage was considered to be the effect of portal congestion, which state of affairs was confirmed by the autopsy. Early on the morning of the 12th, after a tremendous loss of blood, there was every indication of immediate and unavoidable death from syncope, but after the infusion of a moderate amount of physiologic salt solution, the patient rallied and lived for nearly eight hours, at which time another hemorrhage occurred and resulted fatally. It is no exaggeration to state that this lady at her death as was completely exsanguinated as though the carotid arteries had been severed. I have no reliable criterion by which to estimate the enormous amount of blood that was lost, but it was vomited time after time in quantities that would equal a good-sized wash-basin half filled. It is also true that she would have recovered in all probability from the anemia if the subsequent hemorrhages could have been controlled. I make this statement, based upon the fact that, in the former instances, her recovery was speedy and uninterrupted after a few instillations of the saline treatment.

The post-mortem examination revealed the fact that about one-half of the gastric mucosa was literally covered with minute punctate erosions, over which clots might form temporarily, but which would be forced off as soon as the pressure—

the *vis a tergo*—became sufficient. The blood actually sweated, as it were, through the mucous membrane or was forced out by the process of diapedesis. At the time I began the injections, there were no visible signs of respiration or circulation—not the faintest trace of the pulse could be detected, and I did not hesitate to state to the friends that death was at hand, but following the injection, the moribund patient became conscious and the heart regained its power.

It is proper to say that hypodermoclysis should be resorted to in gastrorrhagia *only* when there is imminent danger of a fatal termination from the loss of blood, as experience has shown that transfusion or infusion is likely to cause renewed hemorrhage. In other words, the practitioner must be reasonably sure of his hemostatic resources. In this particular case, any measure of only doubtful or problematical expediency was justifiable, no matter how heroic, because all efforts to control or arrest the bleeding were necessarily futile, owing to the peculiar character of the lesions. In a general way, it may be said that practically the only contraindications to hypodermoclysis and the allied operations are those cases in which it is impossible to control the hemorrhagic tendency by medicinal, mechanical or surgical measures.

It should be remembered that the normal saline solution may be injected into the rectum, the vagina, and directly into the veins, as well as into the cellular tissues, and through all of these avenues it affords marked and positive results. It is a routine practice of many eminent abdominal surgeons and gynecologists to fill the peritoneal cavity with the warm salt-solution after every laparotomy or abdominal section. The injection, in all cases, should be made slowly and deliberately, and the strictest and most scrupulous asepsis is imperative.

PHYSIOLOGICAL ACTION.

Lenhartz (*Annales de Medicine et Chirurg. Infantales*) reports that the subcutaneous injections of a physiological saline solution in acute diseases of children has the immediate effect of raising the blood-pressure and increasing the force of the heart. The consequent lavage of the whole system aided diuresis and diminished the toxins. The number of blood-cor-

puscles and the amount of hemoglobin failed to show any notable increase, but the excretion of sodium chloride becomes rapid, and the high specific gravity of the urine indicates that a large quantity of waste-products and effete matter are being eliminated. The density of the urine later becomes reduced. It has been repeatedly demonstrated that weak solutions of salt, that is, 5 to 10 parts per 1000, if injected directly into the veins, do not affect the integrity of the red blood-corpuscles. Dr. Ilberg, experimenting upon himself, after a pint of a three-quarter per cent solution was slowly introduced through a canula into the cellular tissue of the back or thigh, aiding its absorption by massage, found that the instillation excited thirst and hunger.

The physiologic action of the normal saline solution, then, may be summarized into the following propositions: In hemorrhage it maintains the circulation by giving to the heart a sufficient volume of blood to propel. It also promotes excretion by favoring the elimination of poisons. It is a noteworthy fact that the urinary flow may be augmented three or four times as great as the quantity actually injected. It has been demonstrated by experiments upon animals *in extremis* from the loss of blood that they could be resuscitated by the injection of these solutions. In cases of hemorrhage the amount of fluid injected should bear some proportion to the amount of blood lost. If too much fluid is used, it is rapidly dealt with by a beautiful and wonderful compensatory vaso-motor system, and by diuresis and diaphoresis. In children so small a quantity as one or two ounces is sufficient, and four to six ounces will often be of value in adults.

CASES SUITABLE FOR HYPODERMOCLYSIS.

Hypodermoclysis of normal saline solution has been used with great success in acute anemia, in hemorrhages following wounds and operations, and especially in obstetric practice, where death is near at hand from post-partum hemorrhage, or in the loss of blood incident to miscarriages or abortions, this method is the most rational, and probably the most effective, means of saving life. In all the pregnancies attended with serious loss of blood these injections are absolutely requisite, if the accoucheur does his full duty.

As a stimulant in surgical or traumatic shock, or in collapse from any cause or origin; in other words, in all those conditions where the action of the heart requires maintenance, hypodermoclysis should be brought promptly into requisition. Beyond all doubt, in conditions of rapid exhaustion, or as a means of dispersing shock and of resanguinating the victim of profound hemorrhage, I know of no treatment that will compare with these injections. In the treatment of the above conditions, aside from quietude and rest, we could better afford to do away with all other methods of treatment than to dispense with the generous use of the decinormal salt solutions.

This treatment will meet the indications in all conditions of toxemia, whether from septic poisoning, such as puerperal fever or septicemia, or from the acute infectious or zymotic diseases. It has given excellent results in pneumonia, typhoid fever and the exanthemata. Grave dysentery, peritonitis, ileus, cholera infantum and infantile summer diarrhea are likewise benefitted by this therapeutic resource. In hemoptysis or pulmonary hemorrhage from tuberculosis, it has not been followed by a flattering degree of success. In the intestinal hemorrhage of typhoid fever, on the other hand, it may always be tried with a fair prospect of brilliant results. It is indicated in the acute and chronic diseases of the liver, kidneys and other secretory organs. Puerperal nephritis, puerperal eclampsia, uremic coma and other similar renal disorders deserve special mention as diseases that are amenable to the subcutaneous infusion of salt-solutions. Recently, diabetic coma, one of the most fatal conditions under ordinary treatment, has been successfully overcome by intravenous injections. Poisoning and intoxication by drugs—such as alcohol, opium, phosphorus, and many of the vegetable alkaloids, have yielded promptly to this treatment. Asphyxiation from carbon dioxide or from coal-gas has been quite successfully treated by the saline injections. They should be urgently recommended in the treatment of toxic symptoms from unknown drugs, or where there are no known chemical antidotes.

Some cases of nervous and mental diseases—such as insanity, melancholia and mania, have exhibited marked benefit from this treatment, and the same is true with respect to per-

nicious anemia, and other severe blood dyscrasiæ, such as hemophilia. During the last years a few cases of delirium tremens or mania a potu have been treated by this method. In this last-named disorder, it would, to say the least, be a rather realistic way of applying the principles of suggestion or psychotherapy. There is a possibility that the treatment may be utilized in the alleviation of the neuroses and as an adjunct to the management of the habit diseases—such as liquor, cocaine, morphine and tobacco habits. Here is a fruitful field for future investigation and research.

As a treatment of cholera collapse, saline infusions, intravenous and otherwise, have been used with unexpected success. Out of one hundred and seventeen cases of Asiatic cholera treated by hypodermoclysis and enteroclysis, Lustig reported thirty-four deaths only, which is highly favorable as compared with other methods of treatment. During the algid stage of true cholera this practice is said to give startling results. The plan is, of course, much more effective in cholera infantum, cholera morbus, or sporadic cholera.

In order to know the chief indications for hypodermoclysis and the allied measures, in addition to those already suggested, it is only necessary to remember that they act as powerful vital stimulants to the heart and are capable of tiding over the emergencies and incidents that often tend to the immediate dissolution of the organism. Without attempting to name all the different human ailments in which physiologic solutions of sodium chloride might be used with beneficial effect, in view of its known and established action and effect upon the organism, I would suggest the following generalization: In all those diseases, and their name is legion, accompanied *with a weak and thready pulse, a pinched countenance and a flagging heart*, we have, in hypodermoclysis, enteroclysis and intravenous infusions, simple, safe and effective means whereby to turn the ebbside of many a life we would save. Before the winged messenger of Death has closed the scene, try it—failure may result, but skepticism and pessimism should not be the attributes of modern progressive physicians.

Every advantage possessed by the transfusion of human

blood is possessed in a much greater degree in the saline infusion. At the present day it would be utter folly to use the former at all, notwithstanding the fact that it has some intrinsic merits, but the better process so far eclipses it that there is no tangible reason why the older method should not be abandoned. To illustrate the estimation placed upon transfusion formerly by the authorities, I wish to quote from Dr. Gross, in his "System of Surgery," published about twenty years ago. He says: "Transfusion of blood from the veins of one person into those of another is imperatively demanded when a patient is rapidly sinking from hemorrhage, whether the result of disease, accident or operation. It has hitherto been more particularly employed in profuse and exhausting flooding, and there are many cases on record where it was thus instrumental in saving life. In such an event it is the last recourse of the obstetrician, and no one should hesitate to perform it, even although the woman should be literally in the act of dying, or when, to borrow the language of an eminent writer, 'the vital spirit is fluttering with tremulous delay upon the lips.'" Let the infusion of the normal saline solution be substituted for transfusion and the treatment is brought up to date.

ITS PLACE IN MODERN THERAPEUTICS.

The crowning triumphs of medicine and surgery are derived from those cases that are rescued from the yawning jaws of death. In many cases, I believe that the means and methods under consideration, as compared with any single therapeutic device, are the surest and most positive measures and resources of which we have any knowledge. I am quite sure that they are not called into daily use with such frequency as their merits would imply. If they were, the seeming miracle of restoring and saving the moribund would be a more common incident in the practice of medicine. It is far from my purpose to recommend hypodermoclysis as a panacea or as an absolute and infallible specific for any great number of the ills to which the human flesh is heir—it has its limitations, to be sure; but I do desire to bring its valuable features into prominence for those conditions and diseases *in which it is suitable*. It would be infinitely better to use this procedure occasionally

in cases resulting in failure than by neglect to lose a single patient for the want of it. If by such work as this we can claim the saving of one life, then we can prove to the world the necessity of our existence and our labors will not have been in vain.

In the domain of medicine and surgery there are several epoch-making and life-saving inventions and discoveries. The fertile brains of scientific investigators and clinicians are busy and active in devising other resources in averting death. The energy, ingenuity and skill of a great and learned profession have already supplied us with the ligature, anesthesia, local and general, antiseptics and asepsis, intubation, vaccination, antitoxin therapy, artificial respiration, oxygen inhalation, transfusion of blood and the hypodermic injection of heart stimulants. Finally, the intravenous and subcutaneous injection of solutions of sodium chloride, in my opinion, should rank honorably in the same class. Let us hope that the day is not far remote when the medical profession will adopt this treatment and thereby enable its votaries to accomplish many feats of healing that in times past would have been deemed miraculous and superhuman.

A New Non-Surgical Treatment for Inflammatory Exudates and Their Residua in the Female Pelvis.

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Read before the Medical Society of City Hospital Alumni, March 7, 1901.

DURING the last few years much stress has been laid on the attempt to treat acute and chronic inflammatory conditions of the female pelvis and their residua by methods of a less radical nature. While panhysterectomy continues to be the only resource in certain cases, it was proven on the other

hand, that some conservative measures give equally as good and, in some cases, even better results. These conservative methods are both operative and non-operative. The operative methods attempt to remove only the diseased portion of the genital organs, thereby preserving (should such be possible) the function of menstruation and the possibility of pregnancy. These conservative, operative procedures are mainly recommended and employed by American gynecologists. In some contradiction to them, German authors are attaching more value to the conservative, *non-operative* methods. It seems to me that these methods do not get the appreciation in America which they merit.

A review on the new book of Professor Macnaughton-Jones, of London, in the *New York Medical Record*, December 22, 1900, p. 990, contains the following sentence: "The last chapter, which includes the subject of 'Massage,' would better have been omitted, since mechanical treatment is to-day hardly looked upon by us as a justifiable, let alone a legitimate aid to the cure of diseases peculiar to women."

According to my own experience and the results given by a great many trustworthy authors this view is not justified and in many respects dangerous. The value of some conservative, non surgical procedures is at present, without doubt, established. To this class belong—gynecological massage, hot-water douches, the treatment with the thermophor, etc. With this paper I wish to call your attention to a new procedure, comparatively young and unknown. Being well acquainted with all the above-mentioned methods, I think this new one offers some remarkable advantages. Very favorable results which I have experienced by employing it justify me in recommending the same. In brief, allow me to give you the origin of this new procedure.

Professor W. A. Freund, of Strassburg, inaugurated a method of treatment of pelvic exudates by "pressure-weight," and presented a paper on this subject at the "Naturforscher-Versammlung," at Braunschweig, in 1897. The pressure is produced by placing a bag filled with bird-shot on the abdomen, and at the same time inserting into the vagina a rubber condom also filled with shot.

Funke¹ reported a series of cases from Freund's clinic, in which excellent results followed this treatment, and gave in this report the indications for the use of this method. Before the above was published, Pincus² used and recommended a similar treatment, to which he gave the name of "pressure-posture." His method consists of placing the patient in the Trendelenburg position with a bag of shot on the abdomen, and nothing in the vagina save a colpeurynter filled with air, its object being to support the uterus.³

The many successful cases following the use of these methods induced my former chief, Professor Schauta, of Vienna, to try them in his clinic. Schauta did not limit himself to the use of either method but utilized a combination of both, which consisted in placing a shot bag on the abdomen and at the same time introducing a colpeurynter filled with metallic mercury into the vagina, the patient being placed in the Trendelenburg position.

The most satisfactory results with this method were published by Halban.⁴ Later, Funke⁵ advised some changes in the technique, which I have adopted, and I find them of great practical value.

I will now give you a short account of the rationale, the indications and the technique of this procedure:

The shot bag placed on the lower part of the abdomen compresses the pelvic exudations, while counter-pressure is produced by the vaginal colpeurynter filled with mercury; the latter exerts the same influence in the reversed direction, with the addition, that the uterus is forced out from the lower pelvis, thereby stretching all adhesions and bands, if any exist. For this particular purpose the Trendelenburg posture is the most effective. In this posture the mercurial weight does not, as in the horizontal dorsal position, press against the sacrum,

¹Hegar's Beitræge, Bd. 1, p. 264

²Zeitschrift f. Geb. und Gyn., Bd. 39, p. 13.

³This method is spoken of by John C. Clark. Am. Gynecol. and Obstet. Journ., April, 1900.

⁴Monatschrift f. Geb. und Gyn., February, 1899.

⁵Centralblatt f. Gyn., No. 8, 1900.

but it exerts its influence in the direction of the pelvic axis and tends to press the uterus in the same direction.

In the case of a retroflected uterus, pregnant or non-pregnant, the colpeurynter placed into the posterior fornix will push the uterus directly out of the cul de-sac and cause it to assume an anteverted position, the patient being in the elevated dorsal posture. By changing the position of the patient to either side we can produce the pressure in any direction desired. Such treatment further assists the absorption of exudates by improving the pelvic circulation.

The *indications* for the use of this method are found in cases of chronic inflammatory conditions of the pelvic organs or their results, and in malpositions of the uterus.

Naturally we may expect the most favorable results in lesions situated in the lowest part of the pelvis, for instance, cicatrices following cervico-vaginal lacerations, hard exudates as the result of chronic parametritis, deep seated adhesions and bands after perimetritis, as well as shortening of the sacro-uterine ligaments. In adhesive bands of the fundus uteri the effect is not so manifest, though in such cases we often succeed in materially relieving the subjective symptoms due to the stretching of these bands. In the treatment of retroversion of the uterus, where the fixations are low down in the pelvis, the results of this method are surprisingly good. In cases of incarceration of the pregnant uterus, even a single introduction of the vaginal colpeurynter (filled with mercury) was followed by the correction of this abnormal condition (as reported by Halban and Funke).

The principal contraindications of the use of this method are all *acute* inflammatory conditions of the pelvic contents. In some cases of sub-acute conditions we may use this treatment, but only with the greatest caution, in order to avoid a recurrence of acute symptoms, particularly in cases of pyosalpinx. In such cases, when the tubes and their exudates are located in the cul-de-sac, we often get good results, if the proper precautions are observed. Care must be taken that in these cases the weight of the mercury in the vaginal colpeurynter is between 200 and 400 grams, and the treatment must be immediately stopped as soon as the patient complains of

severe pain. Should the patient have an elevation of temperature, this method must not be repeated.

The general *technique* of this method is as follows:

Two vaginal colpeurynters are connected by means of a stop-cock made of hard rubber, so that the whole length of the apparatus is about 60 cm. Before connecting this apparatus, one of the colpeurynters is filled with 1,000 grams of metallic mercury, while from the other the air is evacuated by compression of the bulb.

The patient is placed in a comfortable recumbent position on a bed or couch, the foot end of which is elevated about 50 to 60 cm.

The empty colpeurynter is folded, introduced into the vagina and placed against the part desired. It is retained in this position by means of two fingers, while the filled colpeurynter is elevated with the other hand, allowing the mercury to flow downward. In the beginning of the course of this treatment it is advisable not to use more than between 250 to 500 grams, and only after the patient has become accustomed to this treatment, we may increase the amount until the upper colpeurynter is completely emptied. The closed valve then prevents the return flow of the mercury. A flat linen bag, containing 1,500 to 2,000 grams of shot is placed on the lower abdomen.

The patient usually remains in the dorsal position, but should it be necessary to turn the patient on either side, the abdominal bag can be kept in position by means of a bandage. To remove the filled colpeurynter from the vagina, the patient is allowed to sit up, and by opening the valve and lowering the empty colpeurynter, the metal flows out readily.

The apparatus should be cleaned and kept in an antiseptic solution.

At the beginning of the treatment the procedure must not consume more than 15 minutes; yet, I have found that patients become speedily accustomed to it, and it is by no means uncommon that patients remain in the Trendelenburg position with the pressure of 1,000 grams in the vagina for four or five hours with very little inconvenience. Usually I leave the colpeurynter in place for one to two hours every sec-

ond day. As mentioned before, the treatment must be interrupted should the patient complain of pain, and in a few days it may be attempted again, but in the event of elevation of temperature this method must be given up, as this condition contraindicates its use.

The pressure treatment is a form of forced massage, but it does not exclude manual massage according to Thure Brandt's method.

We can treat more successfully the adhesions which are situated higher up in the pelvis by means of manual massage, after we have removed the exudates and adhesions below by pressure weight. My experience, as mentioned before, justifies me to strongly recommend this treatment. If applied according to the directions suggested in this paper, it will be followed by good, sometimes by even surprising results.

[3301 LUCAS AVENUE.]

On the Use and Abuse of Nasal Sprays.

By DUNBAR ROY, A.B., M.D.,

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ATLANTA COLLEGE OF PHYSICIANS AND SURGEONS.

Read before the Medical Association of Georgia, April, 1901.

TWO years ago I read a paper before the Georgia Medical Association entitled, "Some Fallacies in the Modern Treatment of Nose and Throat Diseases." In that paper I called attention to the fact that nasal sprays when rightly used were of great benefit to the patient, but when used injudiciously they were absolutely harmful. The more extended my experience becomes, the more firmly convinced am I of the truth of the above statement. Normally, the mucous membrane lining the nasal cavities and nasopharynx is sensitive in the extreme, and this lack of sensibility is present

only when the membrane has undergone a chronic catarrhal condition or when there has been a prolonged use of nasal sprays.

The first proposition is well exemplified in noting the anesthetic condition of the nasal mucous membrane as seen in patients suffering from chronic catarrhal deafness. In such, manipulations can be carried on in the nose and nasopharynx which, if attempted in others, would produce the most excruciating irritation.

Over-stimulation of any glands will lead to atrophy from exhaustion. One of the main functions of the nasal cavities is that of moistening and warming the inspired air before it reaches the lungs; hence the necessity of breathing entirely through the nose and of having a moist state of the nasal mucous membrane.

All irritation of this membrane must cause an activity of the mucous glands with consequent increased flow of the nasal secretion. This is seen, for instance, in the irritation produced by the presence of dust and chemical fumes in the atmosphere.

All substances placed in contact with the nasal cavities are irritating in various degrees—depending upon the character of the substance used and its mode of application.

Local applications are made to the nasal cavities in either of three ways: First, by means of inhalers where the vapor is sucked into these cavities by an effort on the part of the patient; second, by sprays or atomizers where the substance in finely divided particles is forced into the cavities by means of compressed air; third, by means of cotton on the end of a probe.

Of all of these three methods, the use of the spray or atomizer is possibly the most popular, but each has its sphere of usefulness. Like all good things, the spray has been much abused. When we speak of sprays we mean not only those used by means of compressed air but also the various hand atomizers.

Primarily, we might say that sprays are used for three purposes:

1. For cleansing purposes.
2. For its stimulating qualities.

3. For its soothing effect upon the mucous membrane.

Secondarily, we might say that the abuse of sprays consists in :

1. The medical substance used.

2. The frequency of its use.

3. The force of the spray.

Let us now consider the first group.

Physiologists tell us that the mucous membrane of the two nasal cavities secrete about one pint of fluid within the twenty-four hours. This is, of course, more or less evaporated in performing its physiological functions. In inflammatory conditions this amount is greatly increased, which is manifested by a discharge either anteriorly or posteriorly. In acute inflammatory conditions, as in acute coryza, there is an engorgement of the blood-vessels with transudation of serum, producing a watery discharge. In chronic conditions the submucous tissue is involved, the mucous glands are more active and the discharge becomes decidedly thicker and mucoid in character. If there be added to this latter a presence of pus-forming organism, the secretion may then take on a more muco-purulent character.

Bacteriologists tell us that various micro-organisms normally exist in the secretions from the nasal mucous membranes.

If the mucus which is poured out from a chronically inflamed and thickened nasal membrane, be allowed to remain in these cavities, such will almost certainly become semi-purulent in character and will be a marked irritative factor in producing more secretion. This is well evidenced in children who are notoriously in the habit of not blowing their nose. For this reason a muco-purulent rhinitis in such is always difficult of cure. Children should be taught to blow out the nasal secretions at an early age as possible and thus prevent much catarrhal trouble later on in life.

Nasal sprays for cleansing purposes have no place in acute inflammations but find their chief benefits in chronic conditions where there is an abundant mucus or muco-purulent discharge. By cleansing sprays, we mean such solutions as will dissolve and cleanse off the mucus of the nasal cavities, leaving the parts in a condition to receive the proper therapeutics.

The only solution which will accomplish this result is one which is watery and alkaline in character. Solutions made with Seiler's antiseptic nasal tablets, or even one with common salt and bicarbonate of soda, will accomplish this result. Of late, oily sprays have become almost of universal use, but in my experience they have absolutely no place in nasal therapeutics when we desire to cleanse the nasal membrane, pure and simple.

Sprays used for their stimulating qualities can be either watery or oily. In these cases, what we desire to accomplish is to stimulate and promote a healthy activity of the mucous membrane. Such a condition only arises in those chronic cases where the mucous membrane is more or less atrophic, producing a certain degree of dryness in the nasal chambers. Even in these cases there is but a limited use for the oily sprays, since the frequent application of the same has been shown to produce just this pathologic condition of the nasal mucous membrane which we are trying to obviate.

Many of the antiseptic solutions now placed on the market contain just the ingredients necessary for a stimulating spray when properly diluted.

For oily menstruums the following substances are useful: campho-menthol, 20 drops to the ounce; crystal iodine, 1 grain to the ounce; terebene, 15 drops to the ounce.

Soothing sprays are indicated in acute congestive conditions or where we wish to give the surfaces a soothing coating after the use of the cleansing or stimulating applications. It is here that we find the chief use of the oily sprays. After a trial of several years of various substances, I find that a benzoinated oily menstruum or one with a few drops of terebene in it, is by far the best. Benzoinated albolene is excellent. I frequently use pure white melted vaseline, using it while it is yet hot and in the liquid state. In fact, I consider it essential for successful treatment, that all sprays of an oily variety should be heated before such enters the nasal cavities.

The abuse of sprays consists in, first, the improper use of spray solutions, as has been mentioned above. The indiscriminate use of different substances in an atomizer without due reference to its suitability to the given case, is a most egregi-

ous error; such frequently does harm to the nasal mucous membrane and certainly does not increase the reputation of the physician. Each case is a law unto itself and such requires discriminate treatment.

Sprays are excellent in their place, but every case coming to the rhinologist does not require their use. In fact, many of our best rhinologists condemn the use of nasal sprays altogether, claiming that more harm than good is produced through their use. In Germany one rarely ever sees a rhinologist make use of a spray. If they were confined more to the pharynx and nasopharynx, there would be fewer afflicted patients.

The second abuse of sprays is the frequency of their use. This is a great and growing evil among rhinologists. The popular use of late of the menthol oily spray is largely responsible for this error. Then, again, the desire on the part of the rhinologist "to be doing something" is another fruitful cause. Experience teaches me, as I have stated in a previous paper, that there exists a "spray habit" just as we find that of cocaine and morphine. This occurs among patients who use the menthol spray. While menthol is a valuable nasal therapeutic remedy, I yet think that the harm it has done to nasal mucous membranes far outweigh the good. The cooling sensation produced is most refreshing to the patient, and like cocaine, seems to open up the stuffy nasal passages, but my own experience shows me that a reaction of dryness is sure to follow a prolonged use of the same, and this necessitates a more frequent application in order to overcome just this subjective sensation.

The third abuse of the spray consists in the force of the spray. This, of course, applies more particularly to those used by means of the compressed air. I have heard patients complain that when they had previously been treated, the use of the spray was always followed by severe bleeding. This, I consider absolute barbarity. A compression of fifteen pounds is quite a sufficient force with which to throw liquids into the nasal cavities. A force greater than twenty pounds always causes an abrasion of the mucous membrane, especially if a watery solution is used. Traumatism of the membrane by use

of strong compression in the sprays always works serious injury to the same; hence, judicious use in the force of a spray must always be taken into consideration.

In speaking of sprays, mention has not been made of the use of a solution of cocaine. Mention is now made only for the purpose of condemnation. I have never seen a case which required a spray of cocaine but I have seen cases of the cocaine habit which had its origin through just such a mode of treatment on the part of the physician. I always apply cocaine by means of cotton on the end of an applicator, thus limiting its action to the desired part; if this is done, there need never be any fear of cocaine intoxication. I think that it is almost criminal to spray a solution of cocaine in the nose, especially if it be a chronic case, for I am firmly convinced that the number of cocaine habitues would be lessened if this advice was heeded.

In conclusion, allow me to say that the views herein expressed are those deduced from my own personal experience, and is in no way authoritative. Each rhinologist naturally thinks for himself, and I doubt not but that there are many such who will not agree with these ideas of mine, but if I can cause physicians as well as nose and throat workers to study more thoroughly the use of nasal sprays, then I shall feel as if this paper has accomplished some good.

[GRAND OPERA HOUSE.]

The St. Paul Meeting of the American Medical Association.

—The annual meeting of the American Medical Association was held at St. Paul, Minn., June 4 to 7, inclusive. This was a noteworthy meeting in point of attendance, 1500 or more members having been present. Dr. George H. Simmons, the Secretary of the Association, reported a present membership of 10,000, an increase of over 1500 in the past year. The report of the Committee on Reorganization was referred to another committee for the purpose of hearing arguments for and against the recommendations offered and report at a later time. Dr. John A. Wyeth, of New York City, was elected President of the Association for 1902.

EDITORIAL.

EXCLUSION OF CONSUMPTIVE IMMIGRANTS.

The official declaration of the United States Government that tuberculosis of the lungs is a dangerous contagious disease within the meaning of the law, and the issuance of an order prohibiting the landing of immigrants suffering from pulmonary tuberculosis, is a sanitary ruling of great importance. Only a brief visit to the Immigrant Inspection Office on Ellis Island, in New York harbor, is necessary to remove any doubt regarding the undesirable character of the vast hordes of immigrants who pour into America through this and other ports of entry, or to convince one of the urgent need of more stringent regulations for the admittance of this class of undesirable prospective inhabitants.

It is the duty of the Government to protect its citizens from the danger of contamination resulting from the importation of loathesome and contagious diseases, and it has the right to refuse admittance into its domains to those whose physical and mental conditions will soon cause them to become a public charge or menace. For a number of years the Government has refused permission to land to the lame, halt and blind, and the application of this rule to the consumptive is the carrying out of this order in further detail.

The densely crowded foreign quarters in our large cities, where the mode of life, in which these inhabitants had lived in the Old World, is continued in all of its former filthiness, become foci for the rapid propagation and dissemination of disease, and need only the presence of an infective or contagious organism to begin an epidemic. The public hospitals in our cities are filled with these foreign-born indigents whose habits and surroundings are conducive to disease, and for whose care and for the protection of others from their disease-spreading tendencies, our municipalities are compelled to bear a heavy tax for the maintenance of hospitals, sanitary measures, etc.

Since the deportation of immigrants, to whom admission has been refused, is made at the expense of the steamship companies, every effort at deception to gain entrance will doubtless be made by both the steamship companies and by the immigrants themselves, but an examination as rigid as may be possible under the circumstances by the surgeons of the Marine Hospital Service will prevent a large number of those suffering from pulmonary tuberculosis from landing on our shores, who formerly were freely permitted to enter.

Without a close examination it will be difficult to detect pulmonary tuberculosis in its incipient stages, but it is stated that every means possible will be adopted to reduce to a minimum the number of consumptives brought into America, and that all cases will be deported in which the disease has advanced to such an extent that the examining surgeons can detect it with certainty.

In order to confer the greatest good upon the greatest number the Government has acted wisely in declaring this to be a dangerous contagious disease and in refusing admission to those thus afflicted. It thereby places them in the same category, as regards the law, with yellow fever, cholera, plague, typhus and other contagious maladies, and its influence will doubtless be seen in the decrease in the total number of fatal cases from tuberculosis not only in New York City, where the greater portion of them land, but also in that of the country at large.

From an humanitarian point of view it may seem inhuman to deny to such unfortunates the benefits and advantages of a change of climate and the surroundings which a residence in this country might afford them, but since the results of such conditions or the desire of the individual to avail himself of them are problematical, the interests of the country at large are best subserved by their exclusion when their condition can be detected.

THE EARLY DIAGNOSIS OF INSANITY.

In all the realms of human affliction there is nothing short of final dissolution that is so far-reaching as that which undermines the throne of reason and leaves it tottering to a fall. That single attribute which

lifts man above the level of the animal to a plane near to that of his Maker is, next to life itself, the most important and valuable of all the varied faculties with which the human is endowed. With the loss of reason man lapses to the brute stage, or even below it, since he is denied the faculty of instinct which supplies in no small measure the imperfect reasoning powers of the animal, and bereft of reason he becomes a derelict, driven aimlessly by his senseless impulses, bodily sensations and appetites.

No affliction adds so much to the responsibility of the family physician upon whom rests the burden of its early diagnosis as that caused by the appearance of symptoms of mental aberration, and this responsibility is heightened by a knowledge of the stigma which society wrongfully casts upon a family where one or more of its members or antecedents may have suffered from mental alienation.

The borderland between sanity and insanity is a vague and uncertain state which varies with the individual and which renders a correct interpretation of the mental condition at this period one of extreme difficulty.

As the mental characteristics of each individual in health are different from those of another, he can not be taken as a type of a perfect condition of sanity by which to judge the mentality, normal or abnormal, of another, but each must be compared with his own previous behavior. Every individual has his own standard of sanity which may be markedly different from that of another and it is only when his acts are at variance with his former way of speaking, thinking and acting that he may be regarded as insane.

As no part of the body can be effected by disease without its influence on other organs, so also is the symptom complex of mental aberration associated with evidences of functional derangements elsewhere, and one of the early evidences of a deranged mentality when associated with illogical thoughts and expressions there is neglect of the bodily functions, particularly those of the digestive system. Prominent among the premonitory symptoms of insanity are these functional disturbances, together with morbid emotional manifestations and alterations in the mental characteristics of the individual. Somatic functional derangements reveal themselves in various nervous and vaso motor changes

with associated anorexia and other digestive symptoms. These, together with certain negative symptoms, as retinence, obstinancy, sullenness or stupidity have a significance in diagnosis when such is not the natural condition of the individual.

The early diagnosis of insanity is frequently one of extreme difficulty, and those so afflicted will often with consummate skill conceal their delusions while they indignantly refute a question raised as to their sanity. Such ones being unable to long maintain the deception, will sooner or later reveal their true condition, which with tact and patience will early become apparent to the scientific observer.

Some of the most brilliant of the world's geniuses have been men of highly wrought nervous organizations, often suffering from some nervous ailment, and whose mental stability approached dangerously near the dividing line between the normal and the abnormal. Such that they might properly be placed in that category known as borderland cases. The eccentricities of genius are generally the evidences of weakness on the part of those minds whose potentialities are powerfully developed in one direction solely. These are near to the uncertain line that marks the transition between the healthy and diseased mentality, and require often but a slight cause to bring about such a result. When this condition supervenes its early recognition is one of the most difficult problems to solve.

THE CAUSE OF CANCER.

The partial similarity in the slowness of growth and other characteristics which are more or less common to the diseases of tuberculosis, leprosy, and cancer have led investigators to the belief that the causative agent of the latter disease would be found to have morphological characteristics similar to those of the former ones. The endeavor to find a bacillary form of bacteria which would fulfill all the requirements of Koch's law in respect to cancer has doubtless misled bacteriologists and has rendered futile thus far all attempts to discover its contagious principle. The opinion now, however, is gaining ground that the morbid agent in the etiology of cancer belongs to a different

variety of organism, which opinion the investigations of Pfeffer, Russell and Plimmer are, in a measure, confirmatory.

Russell, of England, was the first to call attention to a spherical hyaline micro-organism growing in clusters which he had found in cancer and which he concluded belonged to the yeast group. Sanfelice, in Italy, has been able to produce in dogs metastatic growths that resemble cancer, from inoculation with yeast fungi. Plimmer, also of England, by a newly-devised method of staining has been able to demonstrate a parasitic organism occurring in about 90 per cent of the large number of specimens of cancer which he had examined. These bodies consisted of a hyaline covering with one or more nuclei and were found in the cells at the growing edge of the cancer. They appear also in the leucocytes and between the epithelial cells. Plimmer regards them as altered yeast cells.

In his report of his investigations into the cause of cancer, covering a period of several years, Dr. Harvey R. Gaylord, the Director of the New York State Pathological Laboratory at Buffalo (*American Journal of the Medical Sciences*, May, 1901), advances the theory of its protozoal origin, but his efforts as set forth in his report are incomplete and fall far short in establishing for the organisms which he has studied, the rôle of being the causative agents of cancer.

In the fluid obtained from a case of adenocarcinoma of the peritoneum which had undergone mucoid degeneration he found a large number of small hyaline bodies which changed their form and size under the microscope, undergoing a development to what he considers a spore-forming stage. During this process certain of these bodies were observed to send out prolongations toward the neighboring air bubbles. Some of the peritoneal fluid was injected into the jugular vein of a guinea-pig, whose lungs, fifty days later, showed numerous foci of beginning adenocarcinoma. The injection of the same fluid into the peritoneal cavity of both a dog and a guinea-pig resulted only in a peritonitis with enlargement of the neighboring lymph-glands, but from these glands in both animals he was able to obtain the hyaline bodies. Gaylord believes them to be entirely dissimilar to those described by Russ Plimmer, Sanfelice and others, and that they are protozoal in character and do not belong to yeast family.

Cullen, of Baltimore, who examined some of the specimens, states that the nodules produced in the lungs of the guinea-pig were certainly cancer, but as Cullen also points out, there is a possible source of error which must be considered before it can be said that this carcinomatous growth was caused by the bodies described by Gaylord. The injection used was peritoneal fluid and not a pure culture of the organism, hence there was the possibility of the direct transplantation of the cancer cells from the patient to the animal which, as is well known, may occur. Again, there is no proof of the recovery of these bodies from the growth thus caused. These conditions have not been fully met and the possible sources of error avoided in this report, though it is hoped that these points may be more fully elucidated in his second communication.

The work of Gaylord, though incomplete, is worthy of high commendation, and we hope that by his continued efforts he may be able to substantiate the fact, which he now believes, that he has discovered the cause of cancer.

The Mississippi Valley Medical Association.—The dates of the next meeting of the Mississippi Valley Medical Association have been changed from September 10, 11 and 12 to September 12, 13 and 14. This change has been made necessary because the dates first selected conflict with another large association meeting at the same place. The meeting is to be held at the Hotel Victory, Put in-Bay Island, Lake Erie, Ohio, and the low rate of one cent a mile for the round trip will be in effect for the meeting. Tickets will be on sale as late as September 12, good returning without extension until September 15. By depositing the ticket with the joint agent at Cleveland and paying 50 cents the date can be extended until October 8. This gives members an opportunity to visit the Pan-American Exposition at Buffalo, to which very low rates by rail and water will be in effect from Cleveland.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of February 21, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

DR. J. P. BRYSON read a paper (see page 401 this issue) entitled

A Case of Splenectomy.

DISCUSSION.

DR. A. H. MEISENBACH was requested to open the discussion. American surgeons and investigators, he said, were the first to remove the spleen, at least experimentally. In 1871, the speaker saw the spleen removed from a dog in the Rush Medical College, in Chicago. The dog was shown as a curiosity among the students. The animal was as frisky and sleek and full of pugnacity as other dogs, and it was evident that the removal of the organ had had no detrimental effect.

The case reported by the essayist was fortunate in that it had a long pedicle; this is not always the case. A number of years ago the speaker had seen Dr. Dalton remove the spleen but the pedicle was short and there was much difficulty in locating it. Secondary hemorrhage also occurred.

All who have been in practice a number of years have seen large spleens due to malarial causes, and especially in the Mississippi river bottoms. He had seen one or two cases where the spleen filled the whole abdominal cavity. In the early days of his practice the treatment consisted of large doses of iron and many did well.

It had never been his fortune—or misfortune—to meet a case requiring removal of the spleen. However, he would not hesitate under proper conditions, though he would feel that he was attacking a very

grave condition. The liability of hemorrhage from the pedicle is surgical hindrance.

He asked Dr. Bryson why he would not use the clamp. The speaker could see no material difference in a pedicle of a spleen and that of any other abdominal organ, such as the ovary, with a pedicle. He thought the clamp could be used in a case of this kind without serious effect, just as it would be used in a nephrectomy where we have a large pedicle and necessarily leave the clamp *in situ*. He did not understand whether the pedicle had been dropped intraperitoneally or in the wound, but presumed it was in the former. He asked what the present condition of the patient was as he did not hear this stated; from the history he thought her general health should be improved. Dr. Bryson covered the ground so completely that there is very little to say regarding the surgical aspect, and Dr. Kodis had thoroughly covered the pathological field.

He congratulated Dr. Bryson on the outcome of the case in the face of the high mortality shown by statistics. In this, however, as in all other surgical operations, he believed the statistics were becoming better because of improved technique and asepsis. Aseptic surgery has been the turning point in operative procedures and many operations formerly considered unjustifiable and impossible are now accomplished.

Dr. F. REDER said surgery of the spleen is still in its experimental stage as can be seen from the statistics quoted. He mentioned one operator, Jonnesco, of Bucharest, who has had brilliant results in splenectomy. When he gave out his statistics he had something like twelve cases and three deaths. These splenectomies were performed for what is known as malarial spleen, one case being a hydatid disease. The essayist mentioned leukemia or leucocythemia as a contraindication for removal of the spleen. Other contraindications are—adhesions, great size of the organ, profound cachexia. The indications for removal would probably be failure of medical treatment to reduce the size of the organ and to relieve the pain, also beginning cachexia. The case cited by the essayist was a fortunate one in not having a long pedicle and there being no adhesions; such conditions complicate an operation very much.

The speaker had been present at three splenectomies—one here and two in the East. The two in the East were performed for hypertrophied spleen of malaria. In the case in this city he could not remember if the cause of enlargement had been determined, to all appearances the case was one of malarial spleen. The patient died from secondary hemorrhage. The other two cases were complicated with extensive adhesions and the operator took great precautions so that the rupture of the adhesions was made at the expense of the abdominal walls. The adhesions were separated between double ligatures. The pedical was broad and composed chiefly of blood-vessels, section of the vessels of the pedicle was made between the ligatures; complete hemostasis was secured before closure of the abdomen. The abdomen was tightly bandaged.

The speaker said he did not understand Dr. Kodis' remarks about malarial spleen—whether it was considered a contraindication for non-interference. Dr. Jonnesco claims that such a spleen ought to be removed, especially if there was a tendency to malarial cachexia. Such patients gain rapidly in bodily weight and assume a more normal appearance of the skin. However, since we do not know the function of the spleen there ought to be great hesitancy in removing that organ. Dr. Bryson spoke of the rise of temperature following the operation. The speaker thought this would invariably follow such an operation because of the impoverished condition of the blood, and it was to this condition more than to the operation itself, that the great mortality was most likely due to.

DR. H. W. SOPER was specially interested in this case in view of the fact that he has had a patient under observation for the past four years who has an enlarged movable spleen. The patient is a neurasthenic and the enlarged spleen was discovered while making an examination for some gastric pain. The spleen was down in the iliac fossa. After it was discovered she complained of great pain and discomfort in the region of the spleen, though she stated that she was not aware of the tumor and it had caused her no inconvenience. Dr. H. H. Mudd was consulted and he verified the diagnosis of enlarged and movable, and, perhaps, malarial spleen. It was decided not to operate and efforts were directed toward relieving her of the neurasthenic

symptoms, which succeeded quite well. Since that time, three years ago, the patient has not complained of the spleen.

The spleen lies commonly in the iliac fossa and does not displace the stomach, as would be expected. Inflation shows the stomach to be normal as to size and position; the abdominal walls are lax and the organ can be freely moved from the normal position to the iliac fossa and back again without discomfort.

DR. BRYSON, in closing, said he did not mean to convey the idea that he would not use the clamp in certain cases. The clamp in this case was not applied until the pedicle was ligated, for the reason of its interference with the securing of the vessel by putting the pedicle in state of tension. The gastro-splenic omentum was thin and not difficult to detach though it dragged on the stomach; there was, however, no enlargement or dilatation of that organ. The number of ligatures he thought exceeded 12. The pedicle was held on the finger of the left hand, the aneurysm needle was passed from above downward, the several ligatures placed and tied; then the clamp was firmly applied between the spleen and the ligatures, and the pedicle divided between the clamp and ligatures.

About a year ago he had made an exploratory incision, in the case of a young lady with hypertrophied spleen, but found the adhesions so great that removal was not attempted. The gastro-splenic omentum was divided, however, between ligatures, thinking that possibly the stretching upon this band had something to do with the hematemesis. This recurred, however, within two months. Malaria was suspected as the cause of the hypertrophy, but the plasmodium was never found in the blood.

In regard to the systemic disturbances after removal he thought these were to be expected, and probably one of the most marked phenomena is this rise of blood-pressure, this might have caused the epistaxis. In the literature consulted he could find no mention of this occurrence following splenectomy. The dangers of the operations are principally from hemorrhage and shock, and the hemorrhage may take hours after the operation. Hemorrhage is most apt to occur in the leucemic cases because, it is said, the veins are very thin and friable in these cases.

The recurrence of the crises, increased frequency of the pressure symptom, anorexia and nausea, rendered it necessary to do something or the patient would have died. Since the operation she has been perfectly well.

The patient had been shown before the Society at a previous meeting, and attention was called to the fact that though fully developed sexually, there was almost complete absence of hair on the pubis and in the axillæ.

The patient pleaded for an operation. She had sought employment as a servant but no one would take her because of her peculiar shape. Following the operation there was no enlargement of the lymphatics nor was there before the operation. She had no sign of the enormous appetite which is supposed to follow splenectomy.

The case referred to by Dr. Reder, the speaker thought, was the case reported at the Moscow Congress by Jonnesco. Dr. Jonnesco urges operation in what he calls the malarial spleen. He believes the spleen is not a poison destroyer but simply retains and holds the micro-organism. The speaker was inclined to think this quite probable in view of the great difficulty we have in curing malaria. Had he been willing to prolong the paper he would have said something about this and even gone so far as to suggest an analogy between malaria and syphilis. He had seen a number of cases where the malarial micro-organism after having been driven from the blood by quinine reappear again and again following the exhibition of ergot, which is supposed to cause contraction of the splenic blood-vessels. May not this observation throw some light on the recurring stages of syphilis. In the present state of our knowledge he would be unwilling to operate upon a patient for malarial spleen. The rate of mortality is too high and the undertaking too serious in this condition.

*Meeting of March 7, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

Carcinoma of the Uterus.

DR. A. H. MEISENBACH presented a specimen of carcinoma of the uterus. It was of interest because it was fresh and showed macro-

scopically the carcinoma of the cervix. The specimen was taken from a woman, 55 years of age, ante-mortem. Dr. Meisenbach had seen her for the first time about two weeks previously, being called in consultation by Dr. Toeppen as the patient was supposed to be suffering from an attack of appendicitis. She showed the ravages of long suffering, and the lower part of the abdomen was very tender to palpation and percussion. Five years ago she had a similar attack and since that time at intervals. The tenderness was exquisite and a thorough examination of the abdomen impossible. From the examination he was able to make, however, he was led to believe that there was no appendicitis but that the trouble arose from some pelvic disturbance. Examination of the vagina showed a markedly hardened os. Dr. Toeppen mentioned this and expressed a suspicion of carcinoma, and after digital examination, Dr. Meisenbach agreed with him. In the anterior cul de-sac he found what seemed to be an anteverted uterus; it was very tender and a thorough examination could not be made. The patient was sent to the hospital and kept under observation for a week. The temperature varied from 99.6° to 101°F. One feature about the case was the condition of the digestive tract. The appetite was very poor and denoted a condition seen in patients who have suffered from a long-continued sepsis. After she had been in the hospital a week the abdomen was opened and a conglomeration of conditions was found. Everything seemed to be centered in the median line. He found a well marked urachus and the extremity where it was attached to the bladder was bifurcated. The omentum, anterior part of the abdominal parietes, small intestines, tubes and bladder all matted together in one indescribable and indefinable mass. By a careful separation of the adhesions he worked gradually downward and broke into an abscess cavity. He had taken the precaution to carefully wall off the peritoneal cavity with pads. He succeeded in separating the organs and the conditions disclosed what he had suspected—a pyosalpinx.

He stated here that a section of the os had been examined microscopically and was pronounced carcinoma. Then the question arose whether it would be better to stop the operation or go on with it. He decided to take the greater risk and continue the operation. All pre-

cautions were taken to avoid shock by injecting salt solution, etc., previous to the operation. The hysterectomy was comparatively simple, but the patient did not withstand the operation, living only eighteen hours after. A little tumor was found within the body of the uterus which seemed to be a small fibroma. The cervix showed marked infiltration. one peculiarity about the case was that a woman could have such a condition and yet there be no symptomatic signs of carcinoma. The case showed practically two pathological conditions, a chronic pelvic inflammation involving the right tube—suppurative pyosalpinx, and carcinoma of the cervix. Dr. Meisenbach demonstrated microscopically sections taken from the cervix, and stated that the reason for bringing the specimen was that it was fresh and showed the pathological condition so beautifully.

In reply to Dr. Reder's question as to the cause of death and if drainage had been established, stated that the cause of death was shock, and that drainage had been made through the vagina.

DR. HUGO EHRENFEST read a paper (see page 442 this issue), entitled

**A New Non-Surgical Treatment for Inflammatory Exudates
and Their Residua in the Female Pelvis.**

DISCUSSION.

DR. HENRY JACOBSON thought this method of treating exudates would be followed by good results. However, he had seen very excellent results from very large douches of hot water—three or four gallons at a time, and afterwards the application of a 25 per cent glycerine and ichthyol tampon. He considered ichthyol a very excellent remedy and used it on tampons, and lately had been giving it internally.

DR. MEISENBACH said it had been insinuated that American physicians had made a "carpenter shop" of the female vagina, that he was in the habit of tinkering with the vagina and introducing all sorts of instruments therein for relief. The speaker was glad to learn our friends from across the water were following in the footsteps of the so called American tinkerer.

In 1890 Thure Brand's massage came in vogue. He was not a physician, only a Swedish masseur who introduced massaging the pel-

vic organs. The treatment never received thorough recognition on the part of the better class of German physicians. In the German text-books on gynecology the methods are spoken of in the same manner as generally quoted by American authors on gynecology. The reasons why the method is not in vogue are many. The speaker did not believe that from a moral or scientific standpoint that a woman would be benefitted by the massage treatment and he thought it was often carried on to-day in a manner that would not stand the light of investigation.

For the removal of these exudates he did not know of anything superior to hot water with proper application of ichthyol and glycerine. The method outlined to-night appealed to the mechanical instincts of many but that it would do a great deal for the relief of patients he was in great doubt. He did not think we could thus release a uterus bound down by adhesions without serious after-effects. He did not think it a safe procedure to lift a bound down uterus in that manner just as he did not think it was wise to introduce a pessary into the vagina and raise the uterus in that way; therefore, he thought it safer to do an abdominal or vaginal section than attempt to work in the dark.

There are certain cycles in medicine and surgery—the methods have their day, are used a while then cast off. He was inclined to be conservative and not operate on all cases; each should be studied with regard to its peculiar conditions. He failed to see how the bag of shot would be of benefit when applied to the abdomen; if applied in many cases he felt it would do more harm than good.

In treating patients in hospital and private practice we treat two different classes of people; in the hospitals they are under our control, and this is especially true of hospitals in Germany where patients are looked upon as so much material. In this country in private practice, or even in the hospitals, patients can not be handled as they are in the hospitals of Europe, therefore, many of the methods of treating diseases in vogue across the water can not be applied here.

DR. CHAS. SHATTINGER thought there ought to be no feeling of antagonism between those who advocate surgical and those who advocate mechanical means of treating these cases. We should try to estimate the relative value of the two kinds of treatment. All will agree

that it would be foolhardy to use the shot and mercury treatment in a case of pyosalpinx, a case of encysted pus collection in the pelvis, or purulent infection of the ovary. The indications here are as unequivocal as in case of a felon.

Surgeons are very apt to forget that when they take out an organ or part of organ, instead of triumphantly declaring what they have accomplished, they should feel humiliated. The ablation of an organ is not a triumph of medical science, but an acknowledgment of the failure of medical science. It is the acknowledgment that in order to give relief to a sufferer, it was necessary to mutilate him. However, by this he did not mean to say that a diseased organ should be left in the body when it can not be remedied. There is a difference, too, as to who the patient is. It may be a poor, working woman with little time and less money to spend in attempting to secure relief in a roundabout way. It may be necessary for her to make a sacrifice of some part of her anatomy in order to get the organism into working condition. Even though the same results could be attained in some other way, it might be right in such a case to take a short cut by resorting to the knife. As there is no occasion for enmity between the advocate of mechanical means and the surgeon, just so there should be no reference to difference in treatment according to nationality. German, French and English treat the same as we do. Surgery is the same in Berlin as in New York or St. Louis. But it may be said that Europeans, having been accustomed to a more careful and more elaborate training in medicine, approach the treatment of disease with greater reference to physiology and pathology than the American physician, which has led to the invention and use of certain methods less known here. That has nothing to do with nationality, but with habit of thought. In this connection he desired to refute the statement of Dr. Meisenbach, namely, that Thure Brand's treatment was not adopted by the more reputable physicians. It is true that Brand was a layman, and that his treatment met with great opposition. That recognition was refused so stubbornly by so-called reputable physicians was, in the speaker's opinion, simply an indication that these men were not broad-minded enough to investigate the merits of something which came from a layman. Thure Brand finally succeeded in getting one man to

try his method in a gynecological clinic and, much to the surprise of this gentleman, excellent results were obtained. An extravagant enthusiasm followed this trial, which carried its advocates too far. In the course of time its limitations were discovered and it now occupies a legitimate field.

The criticism of immorality should not be laid to its door and the speaker said he personally refuted this statement. He uses the method, and knows he uses it with clean hands and that his patients receive it with clean sentiments. He had only lately had occasion to treat a lady who had been in the hands of physicians off and on for ten years. Among her medical advisers were some of the most eminent men of our city, and several of our best surgeons. Almost without exception, they advocated an ovariectomy. She came to the speaker for general treatment. Incidentally to his examination, he discovered a pelvic trouble. He found a cystic and prolapsed ovary, the pathological condition being so marked that he, too, advised an operation. He told her that her general condition, though not entirely dependent upon the local trouble, would probably become much better if the ovaries were removed, and that general treatment would promise more afterwards than if the organs were allowed to remain. She positively refused an operation and desired him to do all that was in his power without resorting to surgical means. He promised to do so with the distinct understanding that he would not be responsible for results. In connection with other means of treatment he used the constant current and massage for a number of weeks. The patient still has a cystic ovary, but it is not prolapsed, and she is free from local symptoms and almost free of general disturbance. She declares she is glad she has fought against operative interference for so many years, feeling all the time that some day she would be relieved without an operation. He did not relate this case with a boastful mind or to indorse the views of the lady in opposition to the opinion of the able medical men she had consulted, but to show that he, himself, had in this instance been made a convert. Every day taught him new possibilities in the way of mechanical therapeutics.

The treatment advocated by this evening's paper is a form of massage, and the main effect is probably upon the circulation. The

bag of mercury will no doubt produce a certain amount of local anemia during the time it is in place, especially when coupled with elevation of the hips, while its removal will be followed by a reactive hyperemia.

DR. F. REDER doubted very much if a patient would tolerate the treatment mentioned by the essayist for any length of time. He did not think there was anything new about it except the appliance and he did not think it was a superior method. He could not be convinced that anything was superior to the human hand. The exudations in pelvic conditions are almost exclusively pus formations and many do yield to massage treatment, but the massage is manual, by introducing the finger into the vagina with a boring motion about the walls as long as the patient will tolerate it; this could be carried on two or three times a week. He did not believe a patient would assume the Trendelenburg position with a weight on her abdomen and remain so for any length of time.

DR. JOHN GREEN, JR., asked in what direction the shot bag exercised pressure with the patient in the Trendelenburg position. If the position were extreme he thought pressure would be toward the diaphragm and not toward the pelvis.

DR. EHRENFEST, in closing, said that this treatment does not exclude other kinds of treatment. It is usually combined by him with hot water douches and ichthyol tampons. He would add, however, that Professor Schauta, of Vienna, had been one of the first to recognize the value of gynecological massage, if properly applied. Schauta states that he cures one third of his patients suffering from chronic pelvic exudates and their residua, by means of massage. The value of this treatment has been repeatedly acknowledged by men like Chrobak or B. S. Schultze.

The speaker called the attention of Drs. Meisenbach and Reder to the reports of Funke and Halban. The latter contains detailed histories of thirty-five cases. The speaker had, himself, treated many cases with "pressure weight" and he could assure Dr. Reder that the patients, with the exception of a few had "tolerated" this treatment without complaint. The position assumed is not the extreme Trendelenburg position, as the foot end of the bed or couch is raised only 50

60 centimeters, just enough to give the weight of the mercury in the vagina a better direction. For this special purpose a pillow placed under the buttock proves advantageously.

The treatment is called in the German language "Belastungs Therapie," and not as Dr. Reder said, "Belaestigungs Therapie."

The speaker repeated, what was stated in the paper, that all acute inflammations of the pelvic contents strictly contraindicate this treatment. In cases, in a subacute state, it may be tried, but only with the greatest precautions.

The Medical Association of Missouri.—The Jefferson City meeting of the Medical Association of Missouri was the largest in point of attendance that has ever been held in the history of the Association. Its sessions were replete with interest and in many respects it was a notable meeting. The large attendance was partly due to the place of meeting and to the fact that Governor Dockery was a member of the Association. The papers presented were good and the discussions interesting. One of the most enjoyable of the social features was the reception to the delegates at the Executive Mansion by Governor and Mrs. Dockery. An amendment to the Constitution was introduced to make Jefferson City the permanent meeting place of the Association. The *COURIER* has been one of the earliest advocates of this change, believing it to be to the best interests of the profession in Missouri. The amendment will be voted upon at the next meeting of the Association, which will be held in St. Joseph, in May, 1902. The following officers were elected for the coming year:

President, Dr. J. D. Griffith, of Kansas City.

First Vice-President, Dr. R. E. Young, of Jefferson City.

Second Vice-President, Dr. John C. Whaley, of Osceola.

Third Vice-President, Dr. R. M. Funkhouser, of St. Louis.

Fourth Vice-President, Dr. J. H. Campbell, of Callao.

Fifth Vice-President, Dr. G. W. Vinyard, of Jackson.

Recording Secretary, Dr. B. C. Hyde, of Kansas City.

Assistant Recording Secretary, Dr. F. W. Burke, of Laclede.

Corresponding Secretary, Dr. C. W. Fassett, of St. Joseph.

Treasurer, Dr. J. F. Welch, of Salisbury.

REPORTS ON PROGRESS

DERMATOLOGY.

Staphylococci Producing White Cultures Found in Eczema.

James Galloway and J. W. H. Eyre (*British Journal of Dermatology*, September, 1900) in the discussion on the Parasitic Origin of Eczema before the Paris Congress, deny Unna's morococcus any such constant characters as could constitute a special morbid agent. They believe it to be one form of the staphylococcus epidermidis albus of Welch, an opinion shared by most dermatologists to day. Their conclusions may be summarized as follows :

1. Cocci producing whitish cultures are present in early and uncomplicated lesions of papulo-vesicular eczema. They are all examples of the type *S. epidermidis albus*. There is no reason for separating them into species, nor for saying that one of these is the cause of eczema.

2. Probably many factors are concerned in the production of eczema. The cocci above mentioned, and others, as, *S. P. aureus*, and streptococcus pyogenes, must have important bearings on the development of the malady. The local infectiousness, the chronicity and the purulent features of eczema are doubtless due to their presence.

3. Certain other factors may be concerned, as, organic lesions, especially those causing stasis and edema with consequent malnutrition, the seborrheic state and imperfect metabolism, such as accompanies indigestion and malassimilation, lack of exercise, impure air, etc.

Alopecia Areata.

Mibelli (*Monatsh. f. Prakt. Dermat.*, March 1, 1901) has never observed the seborrheic type of the disease described by Sabouraud, while recognizing, of course, that the majority of ordinary alopecias may, indeed, at times determine a more or less circumscribed fall of

hair, but not one possessing the true characters of the alopecia areata of Celsus.

According to the writer, area Celsi is non-contagious. There is to-day no further excuse for ascribing the condition to a cryptogamic parasite, since we know that the hairs fall because they are atrophied, in other words, because of a preceding affection of their nutrient papillæ. This state of things is the reverse of what obtains in the parasitic affections, in which the fall of hair is a secondary and in no-wise constant phenomenon. Besides, all attempts to discover a parasite in alopecia areata have resulted negatively.

Mibelli believes that certain bacteria may play a rôle, but reminds us how widely a species may vary in morbid power according to various external or internal causes. There must be in this disease a special proneness of certain areas to invasion, other areas resisting successfully. What determines the special proneness of these areas? Mibelli believes that there exist clinical and experimental grounds for claiming that the determining factor is a faulty nerve supply, and seeks to draw a parallel between this alopecia and zoster. He has obtained the best results (as has the reviewer) from the local application of pure carbolic acid.

GRINDON.

PEDIATRICS.

A Plea for the Conservation of Breast-Milk in Whole or in Part.

Southworth (*N. Y. Medical Record*, May 4, 1901) gives, as the official statistics of the German government, a death rate of 51 per cent during the first year of life among artificially-fed babies; while of breast-fed infants only 8 per cent die. But artificial feeding is on the increase to the exclusion of maternal nursing. The factors which enter into the etiology of this situation are numerous. Some mothers are unwilling to nurse, many are incompetent to nurse, and still others, on account of daily duties, find it impossible to feed their offspring.

In many cases ignorance on the part of the mother as to the simplest principles of nursing deprives her infant of breast-milk. The physician should teach every young mother these principles.

How many are in the habit of carefully regulating the nursing of the infant? It is high time that the profession should give deep and thoughtful consideration to this problem. Since cows' milk has been found to agree very well, one is too quick to stop the mother's milk on the slightest cause. If symptoms arise a systematic attempt should be made to improve the breast-milk if this seems at fault.

The ingestion of any insufficient quantity of fluid is one of the most common causes of diminished milk secretion. A liberal diet should be allowed soon after parturition. Castor oil should be given as a laxative. Large doses of salines should be avoided. The hemoglobin should be brought up to normal. Two classes of cases are presented to us for advice:

1. Infants suffering from vomiting, colic and disturbed stools; overfeeding with very strong milk is the most common cause.

2. Children who do not thrive; by weighing the baby often, and ascertaining the quantity of milk ingested, we judge if the quantity is sufficient. Then supplementary feedings may have to be resorted to. But the nursing should be continued; in fact, this mixed feeding is far better than feeding an artificial food alone.

Constipation in Children.

The following prescriptions are advised for constipation in children (*Journ. des Praticiens; N. Y. Medical Journal*, May 4, 1901):

R Sodium bicarbonate.....	180 gr.
Powdered rhubarb.....	10 gr.
Sodium sulphat.....	480 gr.
Essence of peppermint.....	20 gtt.

M. Sig.—From half to one level teaspoonful of this powder, fasting in the morning.

R Manna.....	480 gr.
Calcined magnesia.....	
Sublimed sulphur.....	aa 960 gr.
Honey.....	480 gr.

M. Sig.—From one level teaspoonful to a tablespoonful, dissolved in a cup of milk, to be taken night and morning.

ZAHORSKY.

BOOK REVIEWS.

The Feeding of Infants.—Home Guide for Modifying Milk. By JOSEPH E. WINTERS, M.D., Professor of Diseases of Children, Cornell University College. [E. P. Dutton & Co., Publishers, New York. 1901. Price, 50 cents.

The author states that the fundamental guides in the feeding of Infants are the composition of human milk, the amount of milk secreted by the breasts of a healthy nursing woman and the capacity of the stomach of the infant. There has been no dissemination of these principles and they should be familiar to every mother or nurse. He gives the following requirements for an artificial food for infants ;

1. It must contain all the constituents which are found in human milk.
2. These constituents must be present in the same proportions as in human milk.
3. It must contain nothing that is not found in human milk.
4. It must be of animal origin.
5. It must be fresh.

The author considers the principles above mentioned, but occasionally, it seems to us, goes beyond what might be valuable to the laity. On the whole, while not a complete guide, the little book deserves a wide circulation.

ZAHORSKY.

Manual of the Diseases of Children. By JOHN MADISON TAYLOR, A.M., M.D., Professor of Diseases of Children, Philadelphia Polyclinic, etc., and WILLIAM H. WELLS, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic, etc. Second edition, thoroughly revised and enlarged. Illustrated. [P. Blakiston's Son & Co., Philadelphia. 1901. Price, Cloth, \$4.50.

The entire book has been thoroughly re-written, and a number of new chapters and many special articles are added. This volume is a great improvement over the first edition, and really forms a very complete text-book on the subject of pediatrics. It is more than a

manual. Some of the articles particularly receive very careful and extensive consideration.

The chapter on infant feeding covers sixty pages and may be considered a very practical guide. Substitute infant feeding by laboratory milk and by various home modifications is concisely explained. We fail to find Coit's formula among these methods. The authors use the term, "milk infection" for gastro-enteric infection. As this disease may arise in so many other ways than through the milk, we question very much the utility of such a term.

An excellent article is the one on appendicitis. Both medical and surgical means are recommended in treatment.

The article on diphtheria covers thirty-three pages and is a very thorough description of the subject. The use of antitoxin is given several pages in the treatment and its preparation, administration and results carefully reviewed.

The various infectious diseases receive modern attention. Recent problems, such as quinine in malarial hematuria, are succinctly discussed. The article on malaria is much more complete than is usually found in text-books on children's diseases.

The diseases of the nervous system are treated in a very practical manner. They put an interesting article under the heading, automatic movements. The following diseases may induce automatic movements: Anomalous epilepsy, hysteria, athetosis, automatic rhythmic movements, tic convulsif, and induced automatic movements.

In the cure of hysteria, they quote Bosnia, who uses these three methods:

1. The method of startling.—The child is overpowered by a simple and powerful command.
2. The method of premeditated neglect.—The doctor does not take any notice of the child.
3. The method of disguised psychic means.—(Hydrotherapy, electricity).

We take pleasure in recommending this book to the student and practitioner, not only as a manual, but also as a general guide to the treatment of infants and children in everyday practice.

ZAHORSKY.

International Clinics. Vol. IV, Tenth Series, pages 312. Vol. I, Eleventh Series, pages 312. [J. B. Lippincott & Co., Philadelphia. Price, Cloth, \$2.00; Half Leather, \$2.25 per Volume.

As in previous volumes of these excellent series we find subjects of special importance in the various branches of medicine and surgery and collateral sciences discussed in an interesting and instructive manner by lecturers of international reputation.

The practitioner will find this work a valuable aid in keeping abreast of the progress of his profession. As of special interest may be mentioned articles on the United States Pharmacopeia, by Prof. H. C. Wood; on the Use of Digitalis in Heart Disease, by Prof. A. Potain, of Paris; Mosquitos and the Prophylaxis of Malaria, by Prof. B. Grassi, of Rome; the Role of Blastomycetes in the Etiology of Cancer, by Prof. Roncali, of Rome, in Vol. IV.

Notes on New Remedies, by Dr. A. A. Stevens; Report on Aneurisms, by Dr. Batty Shaw, of London; The Normal Temperature Range, by Dr. Marx, of Berlin; Some Practical Methods of Photomicrography, by W. H. Walmsley; A Review of the Progress of Medicine During the Year 1900, by Dr. N. J. Blackwood, in Vol. I, Series Eleven.

HOGUE.

Consumption, Pneumonia and Their Allies. By THOS. J. MAYS, M.D., Professor of Diseases of the Chest in the Philadelphia Polyclinic, etc. [E. B. Treat & Co., New York. Pages 523. Price, \$3.00

As Dr. Mays states in his preface, the object of the publication of this work is to expound his individual views as to the pathology of pulmonary consumption, pneumonia, bronchitis and other diseases of the respiratory tract, which he formulates as follows:

1. That pulmonary phthisis in the large majority of cases is primarily a neurosis, and that the pulmonary disintegration is secondary.
2. That any agent, influence or condition which undermines the integrity of the nervous system will engender pulmonary phthisis or some other form of pulmonary disorder.
3. That the only remedies of value in the treatment of pulmonary phthisis are those that appeal to and act through, the nervous system.

4. That of special value in the treatment of phthisis is the counterirritant action of silver nitrate introduced hypodermically over the vagi in the neck.

5. That acute pneumonia and other forms of acute pulmonary disease are closely affiliated with disorders of the nervous system.

The author presents a large number of clinical data which he interprets as sustaining his views, and presents his case in manner which will interest, even though it may not convince the reader.

HOGUE.

A Text-Book on Practical Obstetrics. By EGBERT H. GRANDIN, M D., Gynecologist to the Columbus Hospital; Consulting Gynecologist to the French Hospital; Late Consulting Obstetric Surgeon of the New York Maternity Hospital; Late Obstetrician of the New York Infant Asylum; Fellow of the American Gynecological Society, of the New York Academy of Medicine, of the New York Obstetrical Society, etc., with the collaboration of GEORGE W. JARMAN, M D., Gynecologist to the Cancer Hospital; Instructor in Gynecology in the Medical Department of the Columbia University; Late Obstetric Surgeon of the New York Maternity Hospital; Fellow of the American Gynecological Society, of the New York Academy of Medicine, of the New York Obstetrical Society, etc. Third Edition, Revised and Enlarged. Illustrated with 52 full page photographic plate and 105 illustrations in the text. Pages xiv-511. [F. A. Davis Company, Philadelphia. Price, Extra Cloth, \$4 00, net; Sheep, \$4.75, net.

The presentation of the practical features of obstetric work in its clearest and most easily understood manner was apparently the object of the authors of this book. Beginning with the anatomy of the female pelvis and genitalia, their normal and pathological conditions, delivery and operations, including premature fetal expulsion, conditions that are most frequently encountered in an obstetric practice, comprise the scope of this work. Theoretical questions have been omitted and the various subjects treated in the most practical manner. The excellent illustrations with which the book is filled and which show at a glance the idea intended to be conveyed, renders the text easy of comprehension and add greatly to the value of the work.

The book has been somewhat amplified in the third edition by the

edition of the chapter on the anatomy of the female organs of generation, and with embryology, and a re-grouping of some of the illustrations. It is a most excellent, practical work.

The International Medical Annual. A Year Book of Treatment and Practitioners' Index. Nineteenth year, 1901; 34 contributors. [E. B. Treat & Co., New York. Price, Cloth, \$3.00.

This book contains a thorough digest of medical literature of the year 1900 on the treatment of disease. Its subject matter necessarily covers a wide field and embraces nearly everything in the science of medicine that has been brought forward during that period. The various reviews are concisely written, though in sufficient detail to give a clear comprehension of the views of the original writer. This book is devoted solely to the therapeutic side of the practice of medicine and in that department affords practitioners a valuable summary of the therapeutic advance.

Laboratory Directions for Beginners in Bacteriology. An Introduction to Practical Bacteriology for Students and Practitioners of Comparative and Human Medicine. By VERANUS A. MOORE, B.S., M.D., Professor of Comparative Pathology and Bacteriology, New York State Veterinary College, and of Bacteriology, Cornell University Medical College, Ithaca, N. Y. Second Edition, Revised and Enlarged. [Ginn & Co., Boston. 1900.

The increase in our knowledge of the part played by bacteriology in the etiology of disease renders at least a working knowledge of this subject necessary to the progressive practitioner. This little work gives such a complete and practical method, and directions for carrying on laboratory work that the beginner in this field can have no trouble, even without an instructor, in following its directions. It is a practical working guide, taking up the first steps and embracing all the principal features of bacteriological work that are essential for general needs in the practice of medicine. Though intended for the use of the beginner in the laboratory, it is a valuable book for those who have to rely upon themselves in bacteriological examination and whose opportunities for laboratory instruction in this department may have been meager.

NOTES AND ITEMS.

Dr. Thomas F. Rumbold.—On Thursday, May 23, 1901, at the age of 71 years, Dr. Thomas F. Rumbold, one of the oldest practitioners of medicine in St. Louis, died at his home in this city. Born in Scotland, in the historic town of Aberdeen, Dr. Rumbold constantly showed in the long period of an eventful life, those inherited characteristics of his sturdy Scotch ancestry, namely, those of perseverance and energy, which carried him to the forefront in his chosen field despite of his physical infirmity. His innate energy forbade retirement from active work as the eventide of his existence approached but continued until the hand of disease was laid upon him only a short time before his death. Dr. Rumbold came, with his parents, to America at an early age. Graduating from the Jefferson Medical College in 1862, he immediately entered the United States Army, where, notwithstanding his crippled condition, he served with distinction as assistant surgeon. After the close of the war he took up as a specialty the study of the diseases of the nose and throat, and in this branch was one of the pioneers in America. Here he achieved his fame. He was the author of a treatise on the diseases of the nose and throat, and had written numerous scientific articles on the same subject. He was a prominent member of the St. Louis Medical Society and of many of the national organizations.

The Value of a Name.—An enterprising publishing house has brought out a book on the treatment of disease by physical methods and baths by Dr. Stretch-Douse. If there is anything in a name the book should be able to reach success in spite of the cold water of public indifference.

And the Doctor, What of Him?—The daily press has recently contained interesting accounts of the birth of a princess, the first-

born of the royal house of Italy. Salutes were fired and joy reigned supreme. Why not? It is stated that the infant's nurse, besides receiving liberal pay and a pension, will get \$2000 with the baby's first tooth, another \$2000 when the child is able to speak and a similar sum when the little princess walks unsupported. This is as it should be, but what of the doctor who presided at this interesting event? Does he likewise bask in the smiles of royal favor? History is silent. Possibly he was a disciple of Schenk. Boy wanted. The food that failed. His fate is unknown.

The Vagaries of an Emperor.—According to a newspaper statement the Emperor and Empress of Germany have become converts to the teachings of Mrs. Mary G. Baker-Eddy. There is no accounting for the whims of emperor, and it is not surprising in this instance as Emperor William's actions have not infrequently of late given rise to apprehensions regarding the stability of his mental equilibrium. His belief that he is the elect of God, that he is in closer communion with Jehovah than the rest of mankind, and that his every act has the Divine sanction and approval, as is stated, is laying it on a little strong, even for an emperor, in this day and generation. Such fanaticism in a monarch is not conducive to the welfare of his country, and is another instance of the power for mischief of the teachings of the Baker-Eddy cult.

Commissions and Medical Fees.—Dr. Maxwell Foshay, of Cleveland, suggests that twenty-five per cent in addition to the fee charged by the surgeon should be charged by the medical attendant for sharing the responsibility of urging surgical intervention. This should be explained beforehand to the patient and his friends as having been agreed upon by all physicians, and thus avoid the tendency to division of fees and the payment of commissions. He also recommends that charges for attendance in purely medical cases be not made at so much per visit but as is done in fractures and minor surgical operations, namely, in accordance with the value of the service rendered and the responsibility assumed.

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CLINICAL NOTES.

The Usefulness of Good Hypophosphites in Pulmonary and Strumous Affections is generally agreed upon by the profession. We commend to the notice of our readers the advertisement on page 2 of this number. "Robinson's Hypophosphites" also "Robinson's Hypophosphites with Wild Cherry Bark" (this is a new combination and will be found very valuable) are elegant and uniformly active preparations; the presence in them of quinine, strychnine, iron, etc., adding highly to their tonic value.

Grippal Medication Simplified.—The large and increasing number of deaths, especially among our prominent men, due primarily to the prevailing epidemic of La Grippe, and the serious illness of President McKinley from the same cause, impresses us with the advisability of calling the attention of our many readers to the really excellent remedial qualities of the different products of The Antikamnia Chemical Company in the treatment of this scourge and its many insidious allied diseases. For the purpose of reference, we append a list of their various preparations, viz :

Antikamnia Tablets, Antikamnia & Codeine Tablets
Antikamnia & Quinine Tablets, Antikamnia & Salol Tablets
Antikamnia, Quinine & Salol Tablets, Antikamnia Powdered
Laxative Antikamnia Tablets, Laxative Antikamnia & Quinine Tablets

The last mentioned is a new and without doubt a most desirable combination in the above complaints and also in all malarial and congested conditions.

Scarlatina—Typhoid Fever—Hematuria.—Dr. V. Fritts of Luray, Kans., writes as follows to the Salo-Sedatus Chemical Co., of St. Louis, Mo.:

"Some five or six years ago I had my introduction to the use of Salo-Sedatus. My attention was first called to it by a physician of St. Louis, after which we had an epidemic of scarlatina. I was first called to see a patient, a boy 8 years of age, that had been unconscious for twenty-four hours, with a temperature of 105.5° F. After administering the third dose of Salo-Sedatus temperature dropped to 101.5° F. Child was conscious from that time on to convalescence.

"With regard to the treatment of typhoid fever, Salo-Sedatus as a sedative excels anything that I have ever used in my practice. Among the army of menstruums for combating typhoid diseases, Salo-Sedatus as an antipyretic heads the list in my estimation.

CLINICAL NOTES.

"I will now give you my method of treatment of typhoid fever:

"First—As a sedative, Salo-Sedatus.

"Second—Something to open the bowels and act on the liver, Leptandrin in eight-grain doses every four hours until the bowels act freely.

"Third—An intestinal antiseptic, sulpho-carbolate of zinc triturated with bismuth subnitrate.

"Fourth—To control hemorrhage, use fluid extract hamamelis.

"As for heumatiria, I have no use for any other remedy if Salo-Sedatus is used from the first,"

Messrs. R. and F. Schweickhardt, Pharmaceutical Chemists, Proprietors of Mackenzol, submit the following to the readers of the ST. LOUIS COURIER OF MEDICINE:

OFFICE OF C. JOSEPH FLINN, M.D., }
EL PASO, TEX., Dec. 18, 1900. }

DEAR SIRs—Your valuable preparation, Mackenzol gives satisfaction in every case. You will find enclosed \$1.50, for which you will send me more. Very respectfully, C. JOSEPH FLINN, M.D.

N. B.—Doctor, investigate the preparation Mackenzol; it will be to your interest.

J. M. Mathews, A.M., M.D., Professor of Surgery and Diseases of the Rectum, Hospital College of Medicine; *Ex-President of the American Medical Association*, and Mississippi Valley Medical Association; President, Kentucky State Board of Health, writes to Messrs. Arthur Peter & Co., of Louisville, as follows:

"GENTLEMEN — The excellence of your preparations — "Syrupus Roborans" and "Peptic Essence Comp," cannot be questioned. I use both in my practice, and have always been pleased with the effect of each."

Thompson's Tours to Old Mexico.—An elegant special Pullman train leaves St. Louis via the Iron Mountain Route Wednesday, February 27, train consisting of six cars—composite car, dining car, compartment sleeping cars, drawing-room car, and library and observation car. Thirty-four hundred miles of travel in Mexico and on into Tropical Mexico. Six full days in the City of Mexico, at the finest hotel. All large cities of Mexico visited. The most complete tour and the finest Pullman train ever sent to Old Mexico. Address inquiries at once to R. G. Thompson, P. & T. A., Fort Wayne, Ind, or to H. C. Townsend, G. P. & T. A., Iron Mountain Route, St. Louis, Mo.

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Hagee's Cordial of Cod Liver Oil with Hypophosphites of Lime and Soda is the remedy for la grippe. It restores health, and has the further effect of curing the disagreeable post-grippal symptoms so often seen. Thus, night-sweats, loss of weight, and the entire train of nervous symptoms, such as intestinal neuralgia, headache, brain fag, eye-strain, etc., quickly yield to its action. It is pleasant to take, efficient in action, and a great builder of all the tissues.

Salo-Sedatus.—This excellent remedy against febrile and rheumatic affections has not only kept up the good opinion we conceived of it from its first appearance when we began to use it, but it continues to gain more and more friends, who will not abandon it in favor of the many remedies that clamor for similar recognition. Salo-Sedatus is an *E pluribus unum*, to which a practical physician will always stick.—*The Alkaloidal Clinic.*

Notwithstanding the large number of hypophosphites on the market, it is quite difficult to obtain a uniform and reliable syrup. "Robinson's" is a highly elegant preparation, and possesses an advantage over some others, in that it holds the various salts, including iron, quinine, and strychnine, etc., in *perfect solution*, and is not liable to the formation of fungous growths.

Fundamental Pathological Ultimates.—As a foundation for rational therapy in gout and rheumatism it must be borne in mind that in these disturbances we have to deal with a faulty condition of metabolism as the underlying cause, and symptoms vary as to the tissue or organ affected; defective elimination is an important factor in both; the skin, digestive organs and kidneys being at fault. These ultimate facts can be controlled by the mixed treatment suggested in the formula of Tri-Iodides (Henry), which contain all the constituents required as an eliminant.—*Medical Essays.*

Do not forget that when you prescribe Waterbury's Metabolized Cod Liver Oil you are prescribing a food-nutrient, or a medical-nutrient, if you prefer the term. That is, it is appropriated to the fluids and tissues of the body without being eliminated from the body as most medicines are. After having had its medicinal effects—and that, by the way, is a true physiological effect—it becomes a part and portion of the tissues of the body. It appears in the blood as well and enriches that vital fluid with good red corpuscles. The system does not care to

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throw it away. It is there for service, and it is serviceable. It contains all of the medical properties of the best brown oil ever found, and is indicated wherever there is waste of any kind. The disease or functional disorder may have whatever name or character, if there is wasting it is in the system to reconstruct—to upbuild. Any combination can be made with other remedies. It favors the fellowship with good food and desirable medicines.

Ingluvin.—The natural glycocholic acid in Ingluvin is the active principle and the most efficient agent in the treatment of all stomachic and enteric disorders.

Ingluvin is extracted from the lining membrane of the gizzard of the species “*Gallæ*.” It is far superior to pepsin of the hog.

Ingluvin is fast superseding other remedies in indigestion, dyspepsia, cholera morbus, cholera infantum, and stomachic and enteric ailments. It is specific for nausea in pregnancy, alcoholism, seasickness, or from whatever cause.

Ingluvin causes absorption, increases peristaltic action, thereby removing accumulations from the mucous membrane. It allays inflammation, invigorates the debilitated organs, and assists Nature to perform her proper functions.

Ingluvin can be used in combination with other drugs, as in the case with pepsin.

As there is no tonic effect, the dose may be repeated as often as necessary. For dyspepsia, indigestion, and sick stomach, caused from debility of that organ, 5 to 20 grains after each meal. For cholera morbus and alcoholism, 20 grains every two hours until relieved. For marasmus, 5 grains every four hours. For vomiting of pregnancy, full doses of 20 grains should be given; administer first dose immediately upon rising in the morning. In all other forms of nausea, from 10 to 20 grains until controlled.—*Medical Sentinel*.

Thompson's Tours to Old Mexico.—An elegant special Pullman train leaves St. Louis via the Iron Mountain Route Wednesday, February 27, train consisting of six cars—composite car, dining car, compartment sleeping cars, drawing-room car, and library and observation car. Thirty-four hundred miles of travel in Mexico and on into Tropical Mexico. Six full days in the City of Mexico, at the finest hotel. All large cities of Mexico visited. The most complete tour and the finest Pullman train ever sent to Old Mexico. Address inquiries at once to R. G. Thompson, P. & T. A., Fort Wayne, Ind., or to H. C. Townsend, G. P. & T. A., Iron Mountain Route, St. Louis, Mo.

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The "**Philadelphia Medical Journal**" has an excellent offer to make to competent and experienced solicitors. Read their ad on page 31, and write to them.

Robinson's Lime Juice and Pepsin is an excellent remedy in the gastric derangements particularly prevalent at this season. It is superior as a digestive agent to many other similar goods. (See page 13, this issue). See remarks on their Arom. Fluid Pepsin also.

Mortality.—In a recent health report, the mortality from diphtheria and scarlet fever is noticeable. In 719 diphtheria cases, 149 deaths occurred, and in 719 cases of scarlet fever only 46 deaths. Antitoxin is credited with lessening the mortality of the former disease, while in the latter the marked decrease indicates that recovery is largely dependent on the antiseptic treatment in vogue, viz., the increasing use of the chloride solution known commercially as "Platt's Chlorides," both locally and for general disinfecting purposes.—*Medical Examiner*, March, 1901.

Ptomaines.—One of the leading specialists of the South, Dr. W. L. Bullard, of Columbus, Ga., concludes a highly interesting and instructive article on ptomaines in the following manner: In all my 20 years' experience at special work, where the quick and safe relief of pain is the object of treatment, I have found nothing to equal five-grain antikamnia tablets. This remedy is not only a foe to ptomaines and their absorption, but is also a corrective in cases of poisoning by food-decomposition. As purely pain relievers these tablets, of course, are recognized the world over as non cardiac depressants, and free from any tendency to produce habit. I would also call the attention of the profession to those instances wherein it is strongly advisable to rid the system of the materies morbi as well as to correct their harmful influences whether it be in the poisons of food-decomposition or the absorption of ptomaines. In such cases I know of nothing better than Laxative Antikamnia Tablets. These tablets judiciously administered, rid the system in a perfectly natural manner of the offending material and lessen, therefore, the quantity of medicine necessary to be taken by the patient and produce no disturbing influences on the delicate molecular interplay of the nervous structures.

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The Germ of La Grippe and Its Habitat, With Some Remarks on the Successful Treatment of the Disease with Mercuriol.—Dr. Francis A. Mitchell, of New Albany, Indiana, says—A short time ago I was attacked with a very severe form of la grippe. I felt as if the nasal and pharyngeal mucous membrane was in a state of intense inflammation. I was put to thinking as never before, and came to the conclusion that the quickest way to obtain relief was to destroy the microbes which I believed excited the trouble. I determined to try Mercuriol, and to my great surprise the irritation entirely subsided after one thorough spraying with a 2 per cent solution, a similar second application resulted in complete and permanent relief. My method of treatment was first to cleanse the nasal passages of mucus by spraying with an alkaline solution, and then to apply the Mercuriol solution, when the work was done. I believe in the microbic origin of this disease and I am of the opinion that the germs multiply in the nasal chambers, whence they find their way into the throat and bronchi and eventually into the general circulation, when the disease becomes constitutional. I believe the Mercuriol solution, to which I have referred, will break up nine cases out of ten, if treatment be begun during the early stage.

Deceiving the Palate.—In a recent issue of a medical journal appeared the following item: A somewhat clever ruse, practiced for the purpose of administering cod-liver oil to those who object to it, is described as breaking up a conspiracy among the patient's olfactory, optic and pneumogastric nerves. The patient probably confesses he likes sardines, so that without his becoming aware of the trick, the preservative cottonseed oil is emptied away and the sardine box is filled with fresh cod-liver oil, of which every day the patient unconsciously takes a substantial amount.

About the same time that the above appeared in print another authority vouchsafed the information that "a ferruginous water, prepared by keeping a few iron nails in contact with water for a few days, serves to fully prevent the odor and taste of cod-liver oil from being noticed. The mouth is to be rinsed with the water both before and after taking the oil."

These articles take one back to the days of the stage-coach, the hand-press, the tread-mill and the spinning-wheel, and the conviction is forced home that many people do not progress with the age in which they live. Physicians of the modern school have come to the realization that plain cod-liver oil is too violent in its action to be safely administered to patients whose stomachs are in a weakened condition.

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But in order that the full strength of cod-liver oil may be secured, and at the same time additional benefits derived from other valuable bone-building and blood-enriching properties, the careful practitioner prescribes Scott's Emulsion of cod-liver oil. He gives this the preference over all others because during the twenty-six years of its existence it has proved invaluable in the treatments of all cases requiring cod-liver oil combined with hypophosphites of lime and soda and glycerine. It is not necessary to resort to such subterfuges as above cited in order to get the emulsion into the system. Grown folks take it without the slightest hesitancy, while children, however young, really become fond of Scott's Emulsion.

Some Suggestions on the Manner of Using Protargol.—

Having passed the experimental stage it may now be safely asserted on the ground of the remarkably extensive literature published that protargol is one of the most important additions to the materia medica of recent years. Aside from its general use in the treatment of gonorrheal affections it has to a great extent displaced nitrate of silver in diseases of the eye, ear, nose and throat. To obtain uniformly good results attention has been lately drawn to the importance of exercising proper care in making the solution, a point which has been especially emphasized by Prof. Neisser. A clear and satisfactory solution can be secured in any of the following ways: Stir the protargol powder into a thick and smooth paste with a little cold water, and then add the bulk of the fluid. This should be done in a glass or china vessel, using a glass rod; if in a mortar, the latter as well as the pestle should be slightly moistened with a few drops of glycerine. Protargol may also be readily dissolved by dusting the powder evenly upon the surface of the water and allowing the fluid to stand without stirring for about ten minutes. It is very essential that only *cold* water should be used in making the solution, as with warm water the drug is to some extent decomposed, and then becomes less active and may cause irritation; for the same reason the solutions should be preserved in dark-colored yellow bottles. In acute gonorrhea the average strength of the solutions ranges from one to ten grains to the ounce; in chronic urethritis, up to thirty grains; in diseases of the eyes, ears, nose and throat, ten to sixty grains; as an application to wounds and ulcers, one to two per cent solutions and five per cent ointments are in use. Unlike nitrate of silver protargol does not stain the skin even in concentrated solution. The solutions commonly employed in gonorrhea also do not produce stains of the clothing, or if they do, only cause slight discoloration which can be easily

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removed with warm soap water. The much stronger solutions of twenty to fifty per cent sometimes leave behind brownish-yellow stains on the clothing; if recent they can be removed with soda and ammonia; if old by the action of peroxide of hydrogen in the presence of ammonia.

Local Anesthesia in Hemorrhoidal Operations.—Dr. O. W. Green, of Chicago, says that since there are so many people suffering, more or less, from hemorrhoids, and since official operations along that line have been performed only under general anesthesia, we desire to call attention to the fact that we have formulated a method by which hemorrhoidal operations are painlessly performed without the aid of general anesthesia. The operations are rendered painless by using the local anesthesia Acestoria.

Our method of operating on hemorrhoidal tumors is as follows: First, the patient is instructed to take a cathartic the night before the operation, and an enema in the morning. With a saturated solution of boracic acid thoroughly cleanse the rectum, using a syringe or otherwise, and then immediately inject every tumor in sight with Acestoria until each tumor is not sensitive to the prick of the needle. Sometimes it is best to use the bivalve speculum before, sometimes after injection, and sometimes not at all. It depends upon the condition and location of the piles.

With hemorrhoidal forceps or Pean's artery forceps pick up each tumor at its center and turn it out. We generally use the clamp method when possible—use Kelsey's or Pratt's clamp. After turning the tumors slightly outward with the forceps which were left hanging to them, each by turn is clamped at its base. Then with a straight needle put in two or more stitches as may be needed back of the clamp; remove the clamp and cut the tumor with straight scissors through the white line made by the middle blade of the clamp. There will be no hemorrhage if this line is followed. The stitches are now tied and each tumor is thus treated. Then with hydrozone and hot water, one part of the former to five of the latter, syringe or spray the field of operation thoroughly.

The object of using hydrozone is twofold: It is the safest and best germicide and hemastatic we have yet used, and we have tried many. Not being a poison, and depending upon the oxygen it contains for its action, renders it safe under all circumstances, both externally and internally. As a dressing we have several times used nothing, simply cleansing with hot water and hydrozone. An ideal dressing is ordinary sterilized gauze moistened with glycozone. Gly-

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cozone is anhydrous glycerine saturated with ozone, a powerful germicide and promoter of healthy granulations.

To prevent pain usually caused by the prick of the hypodermic needle, touch the point chosen for insertion with a glass pointed rod dipped into a 95 per cent carbolic acid solution. To anesthetize the ear and stop earache, incline the patient's head to one side and drop into the ear about 5 drops of Acestoria, or sufficient to fill the external meatus. Use Acestoria hypodermatically in all cases where incisions and excisions are to be made, such as operations on ingrowing toenails, removal of splinters from the flesh, opening boils, abscesses, etc.

The Clinical Value of the Newer Methods in the Treatment of Puerperal Sepsis.—John O. Polak, B.S., M.D., Adjunct Professor of Obstetrics, New York Post-Graduate Medical School; Instructor in Obstetrics, Long Island Hospital; Surgeon, Williamsburg Hospital; Chief of Gynecological Clinic, Polhemus Memorial Clinic, in a paper on this subject, read before the Associated Physicians of Long Island, January 27, 1900, and published in *The Post-Graduate*, April, 1900, said the following:

Unguentum Credé is the newest and, perhaps, the most reliable antitoxin in pure streptococcic infection. The ointment contains 15 per cent of soluble metallic silver (Argentum Credé) and may be thoroughly rubbed into the cleansed skin until it has approximately disappeared. The integument is then no longer black, but only dirty looking; it is more or less reddened and warmer than normal. This takes from twenty to twenty-five minutes in a well-nourished or youthful skin, and about thirty minutes in an older one. The back, buttocks and loins are the most favorable regions to inunct.

It has been my fortune, during the past few months, to give this preparation a most thorough and varied test in septic conditions; and while it is not a panacea, soluble silver certainly deserves first place among the antitoxins in streptococcic fevers.

Perhaps the most marked instance of its value is shown in the following brief history: Mrs. L., 26 years of age, married, three children, was confined by a midwife four weeks before coming under my observation. She developed sepsis during the first week of the puerperium. A physician was called in, who washed out and curetted the uterus. This interference seemed to increase the infection. General stimulative and antiphlogistic treatment was instituted, but with no result. The temperature kept between 103° and 104° F. for the next three weeks, when I was asked to see her. At this time the fever was 104.4 , pulse 156, irregular and compressible. The tongue dry and dirty, and

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the patient presented the general appearance of advanced sepsis. Physical examination revealed an empty uterus, with pus coming from the cervix; the involution was fair for the period of the puerperium. No parametric involvement could be demonstrated. Believing that no local interference would be of any use, Unguentum Credé was recommended and used in four gram (60 grain) doses every eight hours, and the bowels were moved thoroughly by calomel. Within forty eight hours the temperature was reduced to 102° , where it remained for two days. The quantity of the inunction was diminished to three grams (45 grains) night and morning. During this time the heart was supported by the hypodermic use of strychnia and nitroglycerine, a most excellent combination in sepsis. After the fourth day the temperature continued to fall and the patient's general condition to improve, until the end of ten days recovery was assured.

I mention this case because in the treatment the silver ointment had no co-operation from the surgeon, and deserves whatever credit may be due for the recovery.

In mixed infections of low grade, soluble silver has signally failed; but when the streptococcus could be demonstrated, its remedial value has been most heartily indorsed.

In concluding his paper the author said: I wish to make the following summary of the points to which it is my desire to direct your discussion:

1. That puerperal sepsis usually begins in one of two forms of endometritis, *i. e.*, putrid or septic. In exceptional cases the infection is direct through the inoculation of lacerations and abrasions with the streptococcus or with the tetanus or diphtheria bacillus.

2. That while the curette is indispensable to the successful management of putrid endometritis, it is harmful in an empty uterus, such as is commonly found in the septic form.

3. That all forms of septic infection are benefited by general stimulation and supportive treatment.

4. That, of the antitoxins used, Unguentum Credé has proven its superiority over the antistreptococcic serum.

5. That blood-washing and the artificial production of a hyperleucocytosis are valuable adjuncts to the routine treatment.

Finally, that hysterectomy post partum should be limited to those cases in which the sepsis is localized, as a metritis with pyosalpinx, or tubo-ovarian abscess, after the acute symptoms have somewhat subsided, and that most parametric pus collections can be more safely handled by vaginal section.

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Dermapurine in Moist Eczema.—A girl, aged about 16 years, was brought to me by her mother, who asked me to examine her daughter's face. I found the girl's upper lip very much swollen and covered with a moist eczema which spread over each cheek; this condition, I was told, existed for over a year and had resisted all treatments. I prescribed :

R Liquor pot. arsenitis.....5 00 cc.
Pepsini puri.....0.50 grms.
Vini antimoni.....5.00 cc.
Elix. citro. tr. ferri chloridi.....50.00.

M. Sig. Teaspoonful every six hours.

Externally, I ordered the affected parts thoroughly soaped and washed with hot water as hot as could be borne, using Dermapurine Soap. After the soap having been thoroughly washed off I ordered Liquid Dermapurine to be applied—at first diluted with equal parts of water and gradually increased to full strength. The patient's face improved rapidly and got well.

J. J. LINK, M.D.

P. Blakiston's Son & Co.—We call our readers' attention to the advertisement of P. Blakiston's Son & Co., the well known medical book publishers of Philadelphia. (See page 31). When in need of medical books we suggest that you give this firm a trial, confident that you will receive fair treatment from their hands.

Highest Therapeutical Value.—Dioiburnia has stood the critical test of the most exacting physicians for years and has been pronounced of the highest therapeutical value. Can always be relied upon in all functional disorders of the uterus and appendages, whether acute, subacute or chronic.

The Use of Protargol in Diseases of the Eye.—This subject was discussed at a meeting of the Chicago Ophthalmological and Otolological Society, held October 9, 1900. Dr. J. E. Colburn reported three cases of acute inflammation of the lacrymal sac following an attack of influenza which yielded promptly to injections of a 5 per cent. solution of protargol. He dilates the puncture with a cone-shaped dilator, and injects the protargol into the sac with a dental syringe. One

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injection with the use of an ice-compress was all that was necessary. Dr. A. E. Bulson, Jr., gets results with a 50 per cent. solution that he cannot get with a weaker solution. He agrees with Dr. Colburn that protargol in lacrymal abscesses and in the treatment of all forms of dacryocystitis yields very gratifying results. Dr. Hotz had no results with protargol until he adopted a 20 per cent. solution as his standard. He finds the stronger solution causes no more irritation and pain than weaker solutions. In a case of blennorrhoeal ophthalmia the 5 per cent. solution was absolutely worthless; the 20 per cent. solution was remarkably effectual. Dr. C. P. Prichard finds that protargol stains the conjunctiva more rapidly than nitrate of silver. Dr. W. H. Wilder finds nothing so effective in sago-grain trachoma as a 25 per cent. solution of protargol in equal parts of glycerine and water. Months of treatment have never resulted in staining. Dr. C. D. Wescott reported one case of staining of the conjunctiva from the use of a 10 per cent. solution of every day for two weeks. Dr. Colburn recommends a 10 to 30 per cent. solution for conjunctivitis, but not for dacryocystitis, as it produces too much pain. He always washes the conjunctival sac with a solution of biborate before and fifteen minutes after using protargol.

Pepsin is undoubtedly one of the most valuable digestive agents in our Materia Medica, *provided a good article is used*. Robinson's Lime Juice and Pepsin, and Arom. Fluid Pepsin (see ad page 13) we can recommend as possessing merit of high order. The fact that the manufacturers of these palatable preparations use the purest and best Pepsin and that every lot made by them is carefully *tested* before offering for sale is a guarantee to the physician that he will certainly obtain the good results he expects from Pepsin.

Female Neuroses.—I have prescribed Dioivburnia and Neurosine in female neuroses with results entirely satisfactory. I shall continue to use these two products in combination in all cases indicated. —J. J. KELLY, M.D., Argentine, Kans.

Change of Address.—The Eastern office of the Abbott Alkaloidal Co. in New York City has been removed to 100 William Street. The new quarters are located more conveniently and are much more commodious and afford better facilities for the handling of the rapidly-increasing business of this offices. Eastern patrons of the Abbott Alkaloidal Co. will kindly note this change of address.

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The Henry Heil Chemical Company, whose advertisement of their two new products—Glycobenphene-Heil and Borobenphene-Heil, appears in this number for the first time, needs no commendation from us, as this Company has been furnishing chemicals, etc., of their own manufacture and importation, to the profession, druggists and manufacturing chemists for more than a quarter of a century. There is no Company in St. Louis that has a better reputation, therefore the profession can depend upon any product that they put on the market being fully up to their representations, and we bespeak for them with the profession an impartial trial of their Glycobenphene-Heil and Borobenphene-Heil in such cases in which they are indicated. As an evidence of their good faith they propose to give the profession an opportunity to try their products: upon application, full size bottles of each will be furnished free of charge. Doctor, give them a trial.

Labordine, an efficient and desirable antipyretic, anodyne and sedative without the depressing effect of the coal-tar products. It is indicated in headache, neuralgia and rheumatic pains, especially so when these affections are of malarial origin, as we have them in abundance in this the Mississippi Valley. A pure salicylate from the original source—Labordine has a place in the front rank in chemicals and is of positive therapeutic value.

A. W. LATIMER, M.D.,

1000 Manchester Avenue, St. Louis, Mo.

BOSTON, MASS.

I consider Labordine a wonderful remedy and wish it great success. My order for 10 ounces of Labordine powder and tablets is herewith inclosed.

DR. E. T. MACGREGOR, 219 Avon Hill Av.

NEW YORK CITY.

Please send me a bottle of Antipilus. If it proves half as satisfactory as Labordine I shall be well satisfied.

DR. E. S. BATES,
363 Lexington Av.

Pepsin is undoubtedly one of the most valuable digestive agents in our *Materia Medica*, *provided a good article is used*. Robinson's Lime Juice and Pepsin, and Arom. Fluid Pepsin (see ad page 13) we

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can recommend as possessing merit of high order. The fact that the manufacturers of these palatable preparations use the purest and best Pepsin and that every lot made by them is carefully *tested* before offering for sale is a guarantee to the physician that he will certainly obtain the good results he expects from Pepsin.

Clinical Notes and Comments.—Dr. T. D. Crothers, Editor of the *Quarterly Journal of Inebriety*, in the January, 1901 number, writes: "Antikamnia has become one of the standard remedies, particularly in Influenza. It is prepared with various drugs in tablet form, the latest, a laxative tablet, with quinine and some mild cathartics, called 'Laxative Antikamnia & Quinine Tablets.' All of these forms are very attractive and palatable. We have never seen a case of addiction to antikamnia, hence we prize it very highly as one of the most valuable remedies for diminishing pain without peril. We have used it with excellent results to quiet the pain following the withdrawal of morphia. We have received from this company many complimentary notices showing the vast influence it has secured among regular practitioners. The object of the antikamnia in 'Laxative Antikamnia & Quinine Tablets' besides its antipyretic and analgesic effect, is the prevention of all griping, nausea and other unpleasant effects generally produced by purgatives when administered alone."

Messrs. R. and F. Schweickhardt, Pharmaceutical Chemists, Proprietors of Mackenzol, submit the following to the readers of the ST. LOUIS COURIER OF MEDICINE:

OFFICE OF T. G. STEINER, }
KNOXVILLE, JEFFERSON CO., PA. }

GENTLEMEN—I began with Mackenzol, using it on a patient 75 years of age suffering from senile bronchorrhea, with extreme dyspnea, and I believe I have *the* remedy. Very truly,

T. G. STEINER, M.D.

N. B.—Doctor, investigate the preparation Mackenzol; it will be to your interest.

Highest Therapeutical Value.—Dioiviburnia has stood the critical test of the most exacting physicians for years and has been pronounced of the highest therapeutical value. Can always be relied upon in all functional disorders of the uterus and appendages, whether acute, subacute or chronic.

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A Case of Eczema.—A reader of this journal sends the following clinical report: The patient was a man, aged 41, who had been a sufferer for the last year with eczema of the hands and wrists. This kept his hands constantly red and the itching was agonizing to a degree that almost drove him wild. He was directed to gently wash the crusts off with hot water and some bland soap and to apply noitol every two or four hours according to the severity of the itching. The first application of noitol gave relief from the itching and the patient expressed great satisfaction. He was discharged cured after having used the noitol for ten days. The patient has not suffered any pain or itching since he began the remedy; and this point impressed our physician friend greatly because he felt that his patient was better satisfied because he got relief from the very beginning of treatment.

Female Neuroses.—I have prescribed Dioivurnia and Neurosine in female neuroses with results entirely satisfactory. I shall continue to use these two products in combination in all cases indicated.—J. J. KELLY, M.D., Argentine, Kans.

Pepsin.—The preparations of Pepsin, made by the Robinson-Pettet Co., are indorsed by many prominent physicians. We recommend a careful perusal of the advertisement of this well-known manufacturing house. (See page 13).

Alum Surely Injurious.—The "New York Tribune" publishes interviews with a number of leading physicians of that city on the question of the use of alum baking powders. Among those seen, all of whom agree that alum in food is harmful, were Dr. Wm. H. Thomson, president of the Academy of medicine; Dr. Abraham Jacoby, Dr. George F. Shrady, Dr. Ralph Waldo, Dr. Henry Dwight Chapin, Dr. Joseph D. Winters, Dr. Egbert Le Fevre, Dr. Lewis F. Bishop, secretary of the Academy of Medicine; Dr. George V. Foster, of the New York Hospital, and Dr. Cyrus Edson, formerly health commissioner of New York. These eminent physicians agree with Dr. Vaughan, of the University of Michigan, Prof. Chandler, of Columbia College, Prof. Chittenden, of Yale, and other leading chemists and physicians who recently testified before the United States Senate Committee, that alum baking powders are injurious.

Dr. Jacobi said.—"Alum baking powders are harmful, there is no doubt about it."

Dr. Thomson remarked.—"The use of alum in baking powder is

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very injurious; I am positive of this; it has especially a tendency to produce rickets."

Dr. Edson said in part.—"There is no question that taking alum bread frequently and for a long time, even in minute quantities, would prove very injurious."

Dr. Bishop said.—"All admit that alum in food is injurious and the best authorities state that bread made with alum is harmful even if there is no alum left in the bread after baking, the residue from alum being itself injurious or being reconstituted into alum in the stomach."

Dr. Shrady said.—"Alum used in food in any way is very deleterious. This is the opinion of the medical profession."

The other physicians expressed substantially the same opinion and some urged that the manufacture or sale of baking powder containing alum should be prohibited by law. It has long been claimed that alum is harmful and these prominent opinions ought to settle the matter in the minds of the public.

Good for the Grip.—Salo Sedatus Co., St. Louis. Dear Sirs: In relation to Salo Sedatus will say that I received the sample you sent to me some time ago and had occasion to use it in a very pronounced case of grip with undoubtedly good results. I think it has been some three or four years since my attention was first called to the preparation and what was said of its components struck me favorably, and ever since I have been using it occasionally. Thanking you for the courtesy of the samples, I am very truly yours,

[Signed.]

THOS. B. TURNBAUGH, Bloomfield, Mo.

Dysmenorrhea.—Dr. Geo. Tucker Harrison, obstetrician to the N. Y. Infant Asylum, in an article presented to the section on obstetrics and diseases of women at the fifty-first annual meeting of the American Medical Association, published in the "Journal of the American Medical Association," Vol. XXXVI, No. 6, page 369, describing his experience with various drugs in the treatment of dysmenorrhea, says:

"I need scarcely remind you that a frequent recourse to the use of opium is manifestly contraindicated. Antipyrine has shown, in my hands, wonderful power in relieving the pain of dysmenorrhea. It should be borne in mind, however, that it is very depressing in its action on the heart, and its effects must be carefully watched. Of all the coal-tar derivatives phenalgin in 5-gr. doses, once every hour or two until the pain ceases, has rendered me the greatest satisfaction.



